व्याख्याता पद हेतु पाठ्यक्रम (अंक योजना)
विषय – हिंदी

विषय-वस्तु	अंक
भाग – अ **1. पद्य खंड**	**10 अंक**
2. **गद्य खंड**	**10 अंक**
3. **हिंदी भाषा का क्रमिक विकास**	**10 अंक**
4. **व्यावहारिक व्याकरण**	**15 अंक**
5. **प्रयोजनमूलक हिंदी कौशल परीक्षण, सृजनात्मक लेखन एवं मौलिक अभिव्यक्ति**	**10 अंक**
6. **छत्तीसगढ़ी भाषा व साहित्य**	**05 अंक**
भाग - ब **1. शैक्षिक मनोविज्ञान, शिक्षा में आकलन एवं मूल्यांकन, शिक्षण शास्त्र, शैक्षिक अभिव्यक्ति**	**15 अंक**
2. सामान्य अध्ययन	**25 अंक**
योग -	**100 अंक**

व्याख्याता पद हेतु पाठ्यक्रम

विषय - हिंदी

इकाई 1. पद्य खंड **(अंक - 10)**

आदिकाल से आधुनिक काल - कालगत परिस्थितियों एवं साहित्य पर उसका प्रभाव, साहित्य की प्रमुख प्रवृत्तियाँ, प्रमुख रचनाकार एवं उनकी रचनाएँ, साहित्यिक विशेषताएँ, भाषा शैली।

(क) **आदिकाल** - चंदबरदाई, अमीर खुसरो, विद्यापति

(ख) **भक्तिकाल** -

- **निर्गुण भक्तिधारा** - ज्ञानमार्गी शाखा एवं प्रेममार्गी शाखा (कबीर, दादू, रैदास, नानक, जायसी, कुतुबन)

- **सगुण भक्तिधारा** - राम भक्तिशाखा एवं कृष्ण भक्ति शाखा (तुलसीदास, केशव, सूरदास, भीराबाई, अष्टछाप के कवि, रसखान)

(ग) **रीतिकाल** - रीतिबद्ध, रीतिसिद्ध, रीतिमुक्त काव्य (देव, धनानंद, बिहारी, मतिराम, सेनापति, भूषण, पद्माकर)

(घ) आधुनिक काल -

- भारतेन्दु युग - भारतेन्दु हरिश्चंद, बालमुकुन्द गुप्त, बदरीनारायण चौधरी 'प्रेमधन'
- द्विवेदी युग - मैथिलीशरण गुप्त, महावीर प्रसाद द्विवेदी, श्रीधर पाठक, अयोध्यासिंह उपाध्याय हरिऔध, पदुमलाल पुन्नालाल बख्शी
- छायावाद - जयशंकर प्रसाद, महादेवी वर्मा, सुमित्रानन्दन पंत, सूर्यकान्त त्रिपाठी निराला
- छायावादोत्तर युग - हरिवंश राय बच्चन, माखनलाल चतुर्वेदी, बालकृष्ण शर्मा नवीन नरेन्द्र शर्मा, केदारनाथ अग्रवाल, नागार्जुन, मुक्तिबोध, नेमिचंद्र जैन, प्रभाकर माचये, गिरिजा कुमार माथुर, रामविलास शर्मा, अज्ञेय, भवानी प्रसाद मिश्र, नरेन्द्र शर्मा, धूमिल, धर्मवीर भारती, शंभुनाथ सिंह, रघुवीर सहाय

इकाई 2. गद्य खंड (अंक - 10)

(क) अधोलिखित लेखकों का व्यक्तित्व और कृतित्व -

भारतेन्दु, रामचंद्र शुक्ल, प्रेमचंद्र, जैनेन्द्र कुमार, हजारी प्रसाद द्विवेदी, धर्मवीर भारती, राम विलास शर्मा, निर्मल वर्मा, फणीश्वरनाथ रेणु, कृष्णा सोबती, भीष्म साहनी, शेखर जोशी, विष्णु खरे

(ख) गद्य एवं अन्य विधाओं का प्रारम्भ, विकास, प्रमुख प्रवृत्तियाँ, प्रमुख साहित्यकार, रचनाएँ, साहित्यक विशेषताएँ, भाषा शैली।

(ग) निबंध, कथा साहित्य, उपन्यास और कहानी, नाटक, एकांकी, रेखाचित्र, संस्मरण, यात्रा-वृत्तांत, आत्मकथा, जीवनी, पत्र, डायरी, आलोचना, रिपोतार्ज आदि इन सभी विधाओं का परिचय

इकाई 3. हिंदी भाषा का क्रमिक विकास (अंक - 10)

(क) हिंदी भाषा की बोलियों एवं उपबोलियों एवं उसकी विशेषताएँ एवं भाषा परिवार

(ख) अपठित बोध - अपठित गद्यांश / काव्यांश पर आधारित अर्थग्रहण, भाव-सौंदर्य, शिल्प सौंदर्य संबंधी प्रश्न

इकाई 4. व्यावहारिक व्याकरण

(अंक - 20)

1. काव्य स्वरूप, काव्य आत्मा, शब्द शक्ति, रस, अलंकार (शब्दालंकार, अर्थालंकार, उभयालंकार एवं नए अलंकार) बिंब, छंद, प्रतीक, भाषा, भाषा-शैली

2. वर्ण विचार

- ध्वनियों का वर्गीकरण, वर्ण-वर्गीकरण, उच्चारण-स्थान
- वर्णमाला, वर्तनी, सन्धि / सन्धि-विच्छेद

3. शब्द विचार एवं शब्द भंडार

- शब्द भेद-उत्पत्ति, रचना, रूप और अर्थ की दृष्टि से शब्द
- शब्द भंडार-पर्यायवाची, विपरीतार्थक, एकार्थी, अनेकार्थी, श्रुतिसम भिन्नार्थक शब्द
- शब्द-युग्म शब्द निर्माण उपसर्ग, प्रत्यय, समास

4. पद-विचार, पदबंध, पद-परिचय
संज्ञा, सर्वनाम, विशेषण, विशेष्य (परिभाषा, भेद, लिंग, वचन, कारक)

- क्रिया (परिभाषा, भेद, अकर्मक, सकर्मक, काल, संरचना की दृष्टि से क्रिया भेद. वाच्य, वाच्य भेद, वाच्य परिवर्तन)
- अव्यय (परिभाषा, भेद-क्रिया विशेषण, संबंधबोधक, समुच्चयबोधक, विस्मयादिबोधक-निपात)
- पदबंध-भेद एवं प्रयोग
- पद-परिचय

5. वाक्य-विचार

- वाक्य संरचना, वाक्य भेद अर्थ एवं रचना की दृष्टि से
- वाक्य - परिवर्तन, वाक्य - संश्लेषण, वाक्य - विश्लेषण
- विराम चिह्न, लोकोक्ति एवं मुहावरे

इकाई 5. प्रयोजनमूलक हिंदी कौशल परीक्षण, सृजनात्मक लेखन एवं मौलिक अभिव्यक्ति (अंक - 05)

- पत्रकारिता एवं उसके विविध आयाम

- प्रिंटमाध्यम - समाचार, संपादकीय, रिपोर्ट, आलेख, फीचर, साक्षात्कार आदि के लिए लेखन
- रेडियो व दूरदर्शन के लिए लेखन
- विज्ञापन लेखन, उद्घोषणा, स्वागत भाषण, संगोष्ठी संचालन आदि
- कहानी का कविता में रूपान्तरण, कविता, कहानी, लघुकथा, डायरी लेखन आदि
- कार्यालयी हिंदी, कार्यसूची, कार्यवृत्त, प्रतिवेदन, सरकारी पत्र, सूचनाएँ निविदाएँ आदि

व्यावहारिक हिंदी का स्वरूप

- प्रयोजनमूलक हिंदी और उसके विविध आयाम

इकाई 6. छत्तीसगढ़ी भाषा व साहित्य (अंक - 05)

Part B:

Educational Psychology and Pedagogy: (Marks-15)

Educational Psychology

Study methods in educational psychology, human development, physical development, mental development, emotional development, social development, moral development, adolescent development and problems, guidance and counseling, learning, factors affecting learning, theories of learning, intelligence, creativity, children with special needs, individual differences, personality, personality theories, adjustment, motivation

Assessment and Evaluation in Education

1. Assessment and Evaluation: Meaning, definition, types of assessment techniques, basis of assessment, Demerits of the current assessment system, differences between assessment, evaluation, examination/testing, continuous and comprehensive evaluation.

2. Assessment of Subject-Based Learning: Assessment tools and strategies, assignments and types, construction and classification of achievement tests, planning, construction, and its steps.

3. Teachers' ability to create appropriate instruments: Designing assessment instruments, using class- and subject-specific instruments, characteristics and types of imagination, objectives and types of appropriate assessment criteria, setting and using standards, types of feedback, creating and storing learner profiles, portfolios, rubrics, maintaining student profiles.

4. Testing: Types of tests, classification, essential qualities of a good test, administration, achievement tests in different subjects.

Pedagogy

1. Nature and scope of subjects: Concepts, history, subject aesthetics, and scope. Logical validity of conclusions

2. Student inquiry: Assessing student readiness, relating learning to real life, opportunities for independent problem solving, group learning strategies, and promoting classroom dialogue.

3. Aims and Achievable Objectives: Aims, objectives, and achievable objectives of education in the National Curriculum Framework 2005 and 2023, broad subject-specific objectives in school education.

4. Subject curriculum: Principles of curriculum design, curriculum at different school levels. State curriculum Framework

5. Lesson planning and methods for teaching and learning concepts: Various teaching methods and lesson plans, various learning resources (textbooks, audio-visual, multimedia, etc.).

Pedagogical Attitudes

1. Knowledge and learning: Meaning, nature, significance, various areas of knowledge, cultural knowledge, and values.

2. Teaching as a profession: Positive attitude, interest, and aptitude.

3. Understanding the teaching-learning process: Discipline, receptivity, teaching skills. Criteria for an effective teaching process, effective communication.

4. Constructivist teaching-learning process: Knowledge construction process, characteristics of a constructivist classroom, constructivist teachers.

5. Teacher professional development: Pre-service and in-service training programs, professional learning community, leadership qualities and group dynamics.

6. Gender perspective on education: Biological, social, and psychological determinants of gender, social psychology of gender roles, educational policies and gender concerns, gender issues in education.

Part C

General Studies & General Hindi/English **(25 Marks)**

सामान्य हिंदी **(अंक - 5)**

01. स्वर, व्यंजन, वर्तनी
02. लिंग, वचन, काल
03. संज्ञा, सर्वनाम, विशेषण, क्रिया, क्रिया विशेषण, कारक
04. समास रचना एवं प्रकार
05. संधि- स्वर, व्यंजन एवं विसर्ग संधि
06. व्याकरणिक अशुद्धियाँ
07. शब्द रचना उपसर्ग एवं प्रत्यय
08. शब्द प्रकार, तत्सम तदभव, देशज, विदेशी
09. पर्यायवाची, विलोम शब्द, अनेकार्थी शब्द, अनेक शब्दों या वाक्यांश के लिए एक शब्द

General English **(5 Marks)**

1. Number, Gender, Articles
2. Noun, Pronoun, Adjectives, Verb, Adverb
3. Preposition and Conjunctions
4. Synonyms, Antonyms, Homonyms,
5. One word substitution

6. Spellings, Prefixes, Suffixes

7. Proverb and Idioms

8. Active/Passive Voice

9. Sentences (Declarative, Negative, Interrogative, Imperative, Exclamatory)

10. Punctuations

General Mental Ability (05 Marks)

Reasoning, seeing relationships, analogies, numerical ability, spatial relationships, etc.

To test these factors, it will include questions like: spotting odds, numerical series, letter series, seeing relationships between letters, numbers and pictures, symbolic language, hidden pictures, squares and numbers, mathematical operations, matching pictures, various types of cube patterns, etc.

Computer Education (05 Marks)

- **Introduction to Computers:** What is a computer? Uses of computers in daily life (education, banking, healthcare, office work, communication, etc.), Importance and limitations of computers, General characteristics of computers.
- **Major Components of a Computer:** Introduction to hardware and software, CPU (Central Processing Unit), ALU, CU, Memory, Input devices (keyboard, mouse, scanner, touchpad, etc.), Output devices (monitor, printer, speakers, etc.).
- **Types of Printers**: Inkjet printers, LaserJet printers, Dot Matrix printers, Thermal and other modern printers.

- **Operating Systems:** Role of an operating system, MS-DOS, Commercial operating systems (Windows, MacOS, etc.), Open-source operating systems (Linux, Ubuntu, etc.).
- **Microsoft Office for Office Use:** MS Word – Creating, editing, and formatting documents.MS Excel – Tables, formulas, and charts.MS PowerPoint – Slide creation, design, and presentations.
- **Use of the Internet:** Introduction to the Internet, Inbox, Outbox, CC, BCC, Creating and sending emails, Searching online documents, Website browsing, General knowledge of various government department websites.
- **Antivirus and Computer Security:** What is a computer virus? Types of viruses, Damages caused by viruses, Importance of antivirus software, Safety and security measures.
- **Use of Multimedia:** Meaning of multimedia, Use of audio, video, and text, Applications of multimedia.
- **Storage Devices:** Primary and secondary storage, Hard disk, pen drive, CD/DVD, Introduction to cloud storage.
- **Search Engines and Online Platforms:** Google, YouTube, What is a search engine? How to search for required information? Safe and effective searching techniques.

General Knowledge (05 Marks)

1. Major Constitutional Provisions, Fundamental duties and rights under the Indian Constitution, Indian political system and constitutional rights, Right to Information (RTI), Cultural and national personalities, Democracy and elections, Lok Sabha and Rajya Sabha.
2. Indian History and National Movement, Indian civilization and culture, Historical events ,History of Indian independence from 1857 to 1947, Events that occurred after 1947.
3. Geography: Basic geography, Geography of India and the World.
4. Indian Economy: Social and economic development, Population perspective, Gross National Product (GNP) and per capita income, Five-Year Plans, Agriculture and rural development, Industrial development, Indian economy and banking system, Current economic events
5. General Science: Basic concepts related to physics, chemistry, biology, and botany

6. General Knowledge of Chhattisgarh: History of Chhattisgarh, Geography of Chhattisgarh, Political system, Economy, Government schemes, Awards and honors, Traditions, folk songs and music, important personalities, other important topics related to Chhattisgarh.
7. National Education Policy Part 1 School Education (NEP) 2020.

Lecturer-English

Subject Matter	Marks
Part - A 7. Grammar based questions 8. Vocabulary based questions 9. Questions based on reading comprehension 10. Pedagogy of Language Development	60
Part - B Educational Psychology, Assessment and Evaluation in Education, Pedagogy, Teaching Aptitude	15
Part- C General Studies and General Hindi/English	25
Total -	**100**

Part - A

Subject Based (English) : 50

1. Grammar based questions 15 marks

   a. Determiners
   b. Modals
   c. Question tag
   d. Finite and Non-finite verbs, Phrasal Verbs
   e. Agreement (Between subject and verbs)
   f. Tenses (Kinds and transformation)

g. Identifying clauses (Relative clause – Defining and Non defining, Adverb clause, Noun clause, Non-finite clause)
h. Transformation of Sentences (Simple, Compound, Complex)
i. Speech (Direct and Indirect)
j. Sentence Structure: Employing inversion and cleft sentences
k. Conditional Sentences
l. Elliptical sentence pattern

2. Vocabulary based questions 15 marks

a. Word formation: Root words and Affixes
b. Polysemy, Homophones
c. Collocations
d. Word Class (conversion of words from one grammatical category to another)
e. Lexical Bundles
f. Idiomaticity & Opacity
g. Figure of Speech

3. Questions based on reading comprehension 15 marks

- Two or three unseen passages from different genres prose, poetry, drama, articles, editorials, scientific, and literary extracts. Questions will test comprehension, inference, vocabulary, tone, rhetorical devices, and logical sequencing

4. Pedagogy of Language Development. 15 marks

- Language Learning and acquisition
- Different Approaches/Theories of Language Learning/Teaching
- Linguistic System Of Languages
- Language Skills
- Role of listening and speaking in language learning and function of language.
- Critical perspective on the role of grammar in learning a language for communicating ideas verbally and in written form.
- Methods of Teaching Second Language with reference to English Language Teaching.

- Challenges of teaching language in a diverse classroom; linguistic difficulties in language learning and performance errors.
- Teaching learning materials: Textbook, multi-media materials, multilingual resource of the classroom.
- Remedial Teaching in context of Language teaching.

Part B

Educational Psychology and Pedagogy: 15(Marks) Educational Psychology Study methods in educational psychology, human development, physical development, mental development, emotional development, social development, moral development, adolescent development and problems, guidance and counseling, learning, factors affecting learning, theories of learning, intelligence, creativity, children with special needs, individual differences, personality, personality theories, adjustment, motivation Assessment and Evaluation in Education 1. Assessment and Evaluation: Meaning, definition, types of assessment techniques, basis of assessment, Demerits of the current assessment system, differences between assessment, evaluation, examination/testing, continuous and comprehensive evaluation. 2. Assessment of Subject-Based Learning: Assessment tools and strategies, assignments and types, construction and classification of achievement tests, planning, construction, and its steps. 3. Teachers' ability to create appropriate instruments: Designing assessment instruments, using class- and subject-specific instruments, characteristics and types of imagination, objectives and types of appropriate assessment criteria, setting and using standards, types of feedback, creating and storing learner profiles, portfolios, rubrics, maintaining student profiles. 4. Testing: Types of tests, classification, essential qualities of a good test, administration, achievement tests in different subjects. Pedagogy 1. Nature and scope of subjects: Concepts, history, subject aesthetics, and scope. Logical validity of conclusions 2. Student inquiry: Assessing student readiness, relating learning to real life, opportunities for Exam For Lecturer Recruitment – English (Syllabus) 4 independent problem solving, group learning strategies, and promoting classroom dialogue. 3. Aims and Achievable Objectives: Aims, objectives, and achievable objectives of education in the National Curriculum Framework 2005 and 2023, broad subject-specific objectives in school education. 4. Subject curriculum: Principles of curriculum design, curriculum at different school levels. State curriculum Framework 5. Lesson planning and methods for teaching and learning

concepts: Various teaching methods and lesson plans, various learning resources (textbooks, audio-visual, multimedia, etc.). Pedagogical Attitudes (Educational Aptitude) 1. Knowledge and learning: Meaning, nature, significance, various areas of knowledge, cultural knowledge, and values. 2. Teaching as a profession: Positive attitude, interest, and aptitude. 3. Understanding the teaching-learning process: Discipline, receptivity, teaching skills. Criteria for an effective teaching process, effective communication. 4. Constructivist teaching-learning process: Knowledge construction process, characteristics of a constructivist classroom, constructivist teachers. 5. Teacher professional development: Pre-service and in-service training programs, professional learning community, leadership qualities and group dynamics. 6. Gender perspective on education: Biological, social, and psychological determinants of gender, social psychology of gender roles, educational policies and gender concerns, gender issues in education.

Part C

General Studies & General Hindi/English **(25 Marks)**

सामान्य हिंदी (**अंक - 5)**

01. स्वर, व्यंजन, वर्तनी
02. लिंग, वचन, काल
03. संज्ञा, सर्वनाम, विशेषण, क्रिया, क्रिया विशेषण, कारक
04. समास रचना एवं प्रकार
05. संधि- स्वर, व्यंजन एवं विसर्ग संधि
06. व्याकरणिक अशुद्धियाँ
07. शब्द रचना उपसर्ग एवं प्रत्यय
08. शब्द प्रकार, तत्सम तदभव, देशज, विदेशी
09. पर्यायवाची, विलोम शब्द, अनेकार्थी शब्द, अनेक शब्दों या वाक्यांश के लिए एक शब्द

General English **(5 Marks)**

1. Number, Gender, Articles
2. Noun, Pronoun, Adjectives, Verb, Adverb
3. Preposition and Conjunctions
4. Synonyms, Antonyms, Homonyms,
5. One word substitution
6. Spellings, Prefixes, Suffixes
7. Proverb and Idioms
8. Active/Passive Voice
9. Sentences (Declarative, Negative, Interrogative, Imperative, Exclamatory)
10. Punctuations

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Reasoning, seeing relationships, analogies, numerical ability, spatial relationships, etc.

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- **Introduction to Computers:** What is a computer? Uses of computers in daily life (education, banking, healthcare, office work, communication, etc.), Importance and limitations of computers, General characteristics of computers.
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mouse, scanner, touchpad, etc.), Output devices (monitor, printer, speakers, etc.).

- **Types of Printers**: Inkjet printers, LaserJet printers, Dot Matrix printers, Thermal and other modern printers.
- **Operating Systems:** Role of an operating system, MS-DOS, Commercial operating systems (Windows, MacOS, etc.), Open-source operating systems (Linux, Ubuntu, etc.).
- **Microsoft Office for Office Use:** MS Word – Creating, editing, and formatting documents.MS Excel – Tables, formulas, and charts.MS PowerPoint – Slide creation, design, and presentations.
- **Use of the Internet:** Introduction to the Internet, Inbox, Outbox, CC, BCC, Creating and sending emails, Searching online documents, Website browsing, General knowledge of various government department websites.
- **Antivirus and Computer Security:** What is a computer virus? Types of viruses, Damages caused by viruses, Importance of antivirus software, Safety and security measures.
- **Use of Multimedia:** Meaning of multimedia, Use of audio, video, and text, Applications of multimedia.
- **Storage Devices:** Primary and secondary storage, Hard disk, pen drive, CD/DVD, Introduction to cloud storage.
- **Search Engines and Online Platforms:** Google, YouTube, What is a search engine? How to search for required information? Safe and effective searching techniques.

General Knowledge (05 Marks)

8. Major Constitutional Provisions, Fundamental duties and rights under the Indian Constitution, Indian political system and constitutional rights, Right to Information (RTI), Cultural and national personalities, Democracy and elections, Lok Sabha and Rajya Sabha.
9. Indian History and National Movement, Indian civilization and culture, Historical events ,History of Indian independence from 1857 to 1947, Events that occurred after 1947.
10. Geography: Basic geography, Geography of India and the World.

11. Indian Economy: Social and economic development, Population perspective, Gross National Product (GNP) and per capita income, Five-Year Plans, Agriculture and rural development, Industrial development, Indian economy and banking system, Current economic events
12. General Science: Basic concepts related to physics, chemistry, biology, and botany
13. General Knowledge of Chhattisgarh: History of Chhattisgarh, Geography of Chhattisgarh, Political system, Economy, Government schemes, Awards and honors, Traditions, folk songs and music, important personalities, other important topics related to Chhattisgarh.
14. National Education Policy Part 1 School Education (NEP) 2020.

विषय – संस्कृत

पद का नाम – व्याख्याता

प्राप्तांक 100

अंक

क्रमांक	**विषय-वस्तु**	**अंक**
1	भाग –अ खंड 1. व्याकरण	15
2	खंड 2. वाक्य रचना	15
3	खंड 3. काव्यांश	15
4	खंड 4. गद्यांश	15
5	भाग –ब शैक्षिक मनोविज्ञान, शिक्षा में आँकलन एवं मूल्याँकन, शिक्षण शास्त्र, शैक्षिक अभिवृत्ति	15
6	भाग –स सामान्य अध्ययन	25
	योग	**100**

खंड 1. व्याकरण

खंड 2. वाक्यरचना

खंड 3. काव्यांश

खंड 4. गद्यांश

खंड 1. व्याकरण

* शब्दरूप –

1. अजन्त - राम, जल, पुस्तक, हरि, प्रीति, सखि, नारी, स्त्री, धेनु , शिशु, मातृ, पितृ, गो, स्वसृ।

2. हलन्त - भगवत्, जगत्, गच्छत्, सरित्, आत्मन्, विद्वस्, चन्द्रमस्, पयस् ।

3. सर्वनाम - इदम्, तद्, अस्मद्, युष्मद्, यत्, सर्व ।

*धातुरूप - भू, नम्, चल्, नृत्, मिल्, कथ्, भक्ष, कुध्, वृत्, लभ्, अस्, दिव्, चुर् (लट्, लङ्, लोट्, विधिलिङ्ग, लकारों में)

* संख्या - एक से एक सौ पचास तक)

* कारक - परिचय - उपपद विभक्तियाँ

* प्रत्यय - कृदन्त – तुमुन्, तव्यत्, अनीयर, क्त्वा, ल्यप्, शतृ, शानच्, क्त, क्तवतु, यत्, ण्यत् ।

तध्दित - तरप्, तमप्, मतुप्, इनि, ढक,त्व, त्रल्, मयट्, धा।

* वाच्य - कर्तृवाच्य, कर्मवाच्य, भाववाच्य ।

* सन्धि – स्वर सन्धि, दीर्घ, गुण, यण, वृद्धि, अयादि, प्रकृतिभाव, पूर्वरूप, पररूप ।
व्यञ्जन संधि - अनुस्वार, परसवर्ण, जशत्व ।
विसर्ग संधि - उत्व, सत्व, रुत्व, लोप ।

*समास - तत्पुरुष, कर्मधारय, द्विगु, द्वंद्व, कर्मधारय, बहुब्रीहि, नञ् तत्पुरुष, उपपद तत्पुरुष, प्रादि तत्पुरुष ।

* अव्यय - साम्प्रतम्, सहसा, वृथा, शनैः, कुतः, इतस्ततः, यदि, तर्हि, यावत्, तावत्, परितः, अभितः, सर्वतः, कुतः, किम्, कदा, विना, पुरा, मा, न, एव, यथा, तथा, सह, साकम्, सार्धम् उपरि, नीचैः, शीघ्रम्, प्रातः, सायम्, चिरम् ।

* उपसर्ग - 22 उपसर्ग
* समय बोधनम् - घटी आधारितम्

खंड 2. वाक्यरचना

खंड 1. में निर्धारित व्याकरण बिन्दुओं के प्रयोग पर आधारित शुद्ध - अशुद्ध निर्णय।

अपठित-अवबोधन

अपठित अनुच्छेदों का अवबोधन- अनुवाद एवं प्रश्नोत्तर।

लघु संस्कृत निबन्ध संस्कृत भाषा, साहित्य और संस्कृति से संम्बन्धित।

खंड 3. काव्यांश

रामायणम् – सुन्दरकाण्डम् |

स्वप्नवासवदत्तम्- सम्पूर्णम् |

भगवद्गीता द्वादशः, अध्याय |

खंड 4. गद्यांश

मृच्छकटिकम् – शूद्रक :

शिवराजविजय: - अम्बिकादन्त व्यास:

* कविपरिचय – वाल्मीकि, कालिदास, भास, वेदव्यास, शूद्रक,विष्णु शर्मा, बाणभट्ट।

* संस्कृत सुभाषित – सूक्ति व सुभाषित श्लोक।

* छंद – अनुष्टुप, उपजाति, मालिनी, इन्द्रवज्रा, उपेन्द्रवजा।

* अलंकार -अनुप्रास, उपमा, विभावना, अपह्नुति, सन्देह, रूपक, उत्प्रेक्षा।

* संस्कृत साहित्य का इतिहास अपौरुषेय ग्रन्थ व महाभारत का सामान्य परिचय, तैत्तरीय उपनिषद्।

भाग ब

शैक्षिक मनोविज्ञान (Educational Psychology)

शैक्षिक मनोविज्ञान में अध्ययन पद्धतियाँ, मानव विकास, शारीरिक विकास, मानसिक विकास, भावनात्मक विकास, सामाजिक विकास, नैतिक विकास, किशोरावस्था का विकास और समस्याएँ, मार्गदर्शन और परामर्श, अधिगम, अधिगम को प्रभावित करने वाले कारक, अधिगम के सिद्धांत, बुद्धिमत्ता, सृजनात्मकता, विशेष आवश्यकताओं वाले बच्चे, व्यक्तिगत भिन्नताएँ, व्यक्तित्व, व्यक्तित्व सिद्धांत, समायोजन, प्रेरणा।

शिक्षा में आकलन एवं मूल्यांकन (Assessment and Evaluation in Education)

1. आकलन और मूल्यांकन: अर्थ, परिभाषा, आकलन तकनीकों के प्रकार, आकलन के आधार, वर्तमान आकलन प्रणाली की कमियाँ, आकलन–मूल्यांकन–परीक्षा/परीक्षण के बीच अंतर, सतत एवं समग्र मूल्यांकन।

2. विषय-आधारित अधिगम का आकलन: आकलन उपकरण और रणनीतियाँ, असाइनमेंट एवं उनके प्रकार, उपलब्धि परीक्षणों का निर्माण और वर्गीकरण, योजना, निर्माण और इसके चरण।

3. उपयुक्त उपकरण बनाने में शिक्षक की क्षमता: आकलन उपकरणों का डिज़ाइन, कक्षा एवं विषय-विशिष्ट उपकरणों का उपयोग, कल्पना की विशेषताएँ और प्रकार, उपयुक्त मूल्यांकन मानदंडों के उद्देश्यों और प्रकार, मानक तय करना एवं उनका उपयोग, फीडबैक के प्रकार, शिक्षार्थी फ़ाइल/पोर्टफोलियो/रूब्रिक्स का निर्माण और संधारण।

4. परीक्षण (Testing): परीक्षणों के प्रकार, वर्गीकरण, एक अच्छे परीक्षण के आवश्यक गुण, प्रशासन, विभिन्न विषयों में उपलब्धि परीक्षण।

शिक्षण शास्त्र (Pedagogy)

1. विषयों का स्वरूप और क्षेत्र: संकल्पनाएँ, इतिहास, विषय-सौंदर्य और क्षेत्र। निष्कर्षों की तार्किक वैधता।

2. छात्र अन्वेषण: छात्र की तैयारी का मूल्यांकन, अधिगम को वास्तविक जीवन से जोड़ना, स्वतंत्र समस्या-समाधान के अवसर, समूह-अधिगम रणनीतियाँ, कक्षा संवाद को बढ़ावा देना।

3. उद्देश्य और प्राप्त करने योग्य लक्ष्य: राष्ट्रीय पाठ्यचर्या रूपरेखा 2005 और 2023 के अनुसार शिक्षा के उद्देश्य, लक्ष्य और प्राप्त करने योग्य लक्ष्य; स्कूली शिक्षा में विषय-विशिष्ट व्यापक उद्देश्य।

4. विषय पाठ्यचर्या: पाठ्यचर्या निर्माण के सिद्धांत, विद्यालय के विभिन्न स्तरों पर पाठ्यचर्या, राज्य पाठ्यचर्या रूपरेखा।

5. पाठ योजना और शिक्षण-अधिगम विधियाँ: विभिन्न शिक्षण विधियाँ एवं पाठ योजनाएँ, अधिगम संसाधनों के प्रकार (पाठ्यपुस्तकें, ऑडियो-विजुअल, मल्टीमीडिया आदि)।

शैक्षिक अभिवृत्ति (Pedagogical Attitudes)

1. ज्ञान और अधिगम: अर्थ, प्रकृति, महत्व, ज्ञान के विभिन्न क्षेत्र, सांस्कृतिक ज्ञान और मूल्य।

2. शिक्षण एक पेशा के रूप में: सकारात्मक दृष्टिकोण, रुचि और अभिवृत्ति।

3. शिक्षण-अधिगम प्रक्रिया की समझ: अनुशासन, ग्रहणशीलता, शिक्षण कौशल, प्रभावी शिक्षण प्रक्रिया के मानदंड, प्रभावी संचार।

4. रचनावादी शिक्षण-अधिगम प्रक्रिया: ज्ञान निर्माण की प्रक्रिया, रचनावादी कक्षा की विशेषताएँ, रचनावादी शिक्षक।

5. शिक्षक का व्यावसायिक विकास: पूर्व-सेवा और सेवा-कालीन प्रशिक्षण कार्यक्रम, व्यावसायिक अधिगम समुदाय, नेतृत्व गुण और समूह गतिकी।

6. शिक्षा में लैंगिक परिप्रेक्ष्य: लिंग के जैविक, सामाजिक और मनोवैज्ञानिक निर्धारक, लिंग भूमिकाओं का सामाजिक मनोविज्ञान, शैक्षिक नीतियाँ और लैंगिक चिंताएँ, शिक्षा में लैंगिक मुद्दे।

भाग (स)

सामान्य अध्ययन

सामान्य हिन्दी **(अंक -5)**

1. स्वर, व्यंजन, वर्तनी
2. लिंग, वचन, काल
3. संज्ञा, सर्वनाम, विशेषण, क्रिया, क्रिया विशेषण, कारक
4. समास रचना एवं प्रकार
5. संधि- स्वर, व्यंजन एवं विसर्ग संधि
6. रस व अलंकार, दोहा, छंद, सोरठा
7. व्याकरणिक अशुद्धियाँ
8. शब्द रचना उपसर्ग एवं प्रत्यय
9. शब्द प्रकार, तत्सम तदभव, देशज, विदेशी
10. पर्यायवाची, विलोमार्थी, अनेकार्थी शब्द, अनेक शब्दों या वाक्यांश के लिए एक शब्द
11. मुहावरे व लोकोक्तियां

सामान्य अंग्रेजी **(अंक -5)**

UNIT-1 ENGLISH GRAMMAR-

1. Number, Gender, Determiners
2. Parts of Speech
3. Auxiliaries, Modals, Tense
4. Types of Sentences Structures

UNIT-2 TRANSFORMATION OF SENTENCES

1. Active/Passive Voice
2. Direct/Indirect Narration

UNIT-3 VOCABULARY

1. Synonyms/Antonyms
2. One word substitution
3. Spellings
4. Proverb, Idioms and phrases

सामान्य मानसिक योग्यता – **(अंक -05)**

तर्क करना, संबंध देखना, एनालॉजी, आंकिक योग्यता, आकाशीय संबंध आदि।

इन कारकों का परीक्षण करने के लिए सामान्यतः इस प्रकार के प्रश्न पूछे जाते हैं- विषमता को पहचानना, आंकिक श्रेणी, अक्षर क्षेणी, अक्षर, अंक और चित्रों द्वारा संबंध देखना, सांकेतिक भाषा, छुपे हुए चित्र, वर्ग एवं अंक, गणितीय संक्रियाएँ, चित्रों का मिलान, घन संबंधी विभिन्न प्रकार के पैटर्न आदि-आदि।

कम्प्यूटर शिक्षा – **(अंक -05)**

- कम्प्यूटर का परिचय : कम्प्यूटर क्या है?, दैनिक जीवन में कम्प्यूटर का उपयोग,(शिक्षा, बैंकिंग, स्वास्थ्य, कार्यालय, संचार आदि), कम्प्यूटर का महत्व और सीमाएँ, कम्प्यूटर की सामान्य विशेषताएँ।
- कम्प्यूटर के प्रमुख भाग: हार्डवेयर एवं सॉफ्टवेयर का परिचय,सी.पी.यू. (CPU),ALU, CU, Memory, इनपुट डिवाइस (कीबोर्ड, माउस, स्कैनर, टचपैड आदि), आउटपुट डिवाइस (मॉनिटर, प्रिंटर, स्पीकर आदि)।
- प्रिंटर के प्रकार : इंकजेट प्रिंटर,लेज़रजेट प्रिंटर,डॉट मैट्रिक्स प्रिंटर,थर्मल एवं अन्य आधुनिक प्रिंटर ।

- ऑपरेटिंग सिस्टम : ऑपरेटिंग सिस्टम की भूमिका, एम.एस. डॉस (MS-DOS), कमर्शियल ऑपरेटिंग सिस्टम (Windows, macOS आदि), ओपन सोर्स ऑपरेटिंग सिस्टम (Linux, Ubuntu आदि)।
- कार्यालयीन उपयोग हेतु Microsoft Office : MS Word - डॉक्यूमेंट बनाना, संपादन, फॉर्मेटिंग । MS Excel - टेबल, फार्मूले, चार्ट । MS PowerPoint - स्लाइड निर्माण, डिज़ाइन, प्रस्तुतीकरण।
- इंटरनेट का उपयोग : इंटरनेट का परिचय, Inbox, Outbox, CC, BCC, ई-मेल बनाना व भेजना, ऑनलाइन डॉक्यूमेंट खोज, वेबसाइट सर्फिंग, विभिन्न सरकारी विभागों की वेबसाइटों की सामान्य जानकारी।
- एंटीवायरस एवं कम्प्यूटर सुरक्षा : कम्प्यूटर वायरस क्या है?, वायरस के प्रकार, वायरस से होने वाले नुकसान, एंटीवायरस सॉफ्टवेयर का महत्व ,सुरक्षा उपाय।
- मल्टीमीडिया का उपयोग : मल्टीमीडिया का अर्थ, ऑडियो, वीडियो और टेक्स्ट का उपयोग, मल्टीमीडिया अनुप्रयोग।
- स्टोरेज डिवाइस : प्राथमिक व द्वितीयक स्टोरेज, हार्ड डिस्क, पेन ड्राइव, सीडी/डीवीडी, क्लाउड स्टोरेज का परिचय।
- सर्च इंजिन एवं ऑनलाइन प्लेटफॉर्म - गूगल, यूट्यूब, सर्च इंजिन क्या है?, वांछित जानकारी कैसे खोजें?, सुरक्षित एवं प्रभावी सर्चिंग तकनीकें।

सामान्य ज्ञान (अंक -05)

1. मुख्य संवैधानिक प्रावधान, मौलिक कर्तव्य एवं भारतीय राजनैतिक व्यवस्था एवं संविधान अधिकार, सूचना का अधिकार, सांस्कृतिक, राष्ट्रीय व्यक्तित्व, लोकतंत्र एवं चुनाव लोकसभा, राज्यसभा।
2. भारतीय इतिहास एवं राष्ट्रीय आंदोलन भारतीय सभ्यता एवं सांस्कृतिक, ऐतिहासिक घटनाएं, भारतीय

स्वतंत्रता का इतिहास 1857 से 1947 तथा, 1947 के बाद का घटनाक्रम।

3. भूगोल : सामान्य भूगोल, भारत एवं विश्व का भूगोल।
4. भारतीय अर्थव्यवस्था: सामाजिक एवं आर्थिक विकास, जनसंख्या परिप्रेक्ष्य, सकल राष्ट्रीय उत्पादन और प्रति व्यक्ति आय, पंचवर्षीय योजनाएं, कृषि व ग्रामीण विकास, औद्योगिक विकास, भारतीय अर्थव्यवस्था, बैंक प्रणाली, वर्तमान आर्थिक घटनाक्रम

5. सामान्य विज्ञान : भौतिकी, रसायनशास्त्र एवं जीव तथा वनस्पति विज्ञान से संबंधित मूलभूत जानकारी।
6. छत्तीसगढ़ की सामान्य जानकारी : छत्तीसगढ़ का इतिहास, भूगोल, राजनैतिक व्यवस्था, अर्थव्यवस्था शासकीय योजनाएं, पुरस्कार-सम्मान, परम्परायें लोकगीत-संगीत, महत्वपूर्ण व्यक्तिव एवं छत्तीसगढ़ से संबंधित अन्य महत्वपूर्ण विषय।
7. नई शिक्षा नीति 2020।

Lecturer Geography (Total Marks-100)

Content	Marls
Part - A Geography as a subject, Earth, Climate, Ocean water and life on Earth	25
World Population, Economic Activities , Population and Resources of India, Planning and Sustainable, Development in the Context of India	15
Geography of India, Geography of Chhattisgarh, Cartography	20
Part - B Educational Psychology, Assessment & Evaluation in Education, Pedagogy, Educational Aptitude	15
Part - C Language Proficiency and General Study	25
Total	**100**

Part – A (Marks-25)

- **Geography as a subject**
  1. Meaning, Definition , Geography as an Integrative Subject
  2. Branches of Geography - Systematic Approach, Based on Regional Approach
  3. Importance of Geography Study
  4. Human Geography Definition, Nature and Subject Area
  5. Concepts of human geography, determinism, possibilism, neo-determinism

Concepts Earth

1. Theories of origin: Early theories, Modern theories
2. internal structure of the Earth
3. Theories of the origin and evolution of oceans and continents
4. Geomorphic processes – endogenic processes, exogenic processes
5. Landforms and their evolution – flowing water, glaciers, wind, groundwater, sea waves

Climate

1. Atmospheric composition , structure, solar radiation, heat balance and temperature
2. forms of water vapor condensation in the atmosphere
3. Weather systems – air pressure, world distribution of air pressure, general circulation of the atmosphere, classification of winds, air masses, fronts
4. World climate classification, climate change, water

Ocean water and life on Earth

1. Ocean floor , temperature , salinity
2. Ocean water movement – waves , currents , tides
3. Life on Earth - Biodiversity and Conservation

World Population **(Marks-15)**

1. Patterns of population distribution and population structure
2. Population distribution density and factors affecting it
3. Population growth, components of population change
4. Causes of population growth and measures to control it
5. Human development – approaches to human development, measurement, international comparison

Economic Activities –

1. primary activities
2. Secondary
3. tertiary
4. quartile, fifth

Population and Resources of India

1. Population, distribution, density, growth and composition
2. domicile
3. Land Resources and Agriculture
4. Water resources
5. Mineral and Energy Resources
6. Transport, Communication, Industry and International Trade

Planning and Sustainable Development in the Context of India

1. Area Planning
2. sustainable sustainable development
3. Selected issues and problems from a geographical perspective
4. environmental pollution, water, air, noise, pollution
5. Land degradation - slum, urban, waste, disposal
6. Natural disasters, causes, consequences and management

- **Geography of India** **(Mark-20)**

1. Location and exten
2. geographical and geological structure
3. drainage system
4. climate
5. Soil and natural vegetation

Geography of Chhattisgarh

1. Location, area, and population

2. physical and geological structure
3. Drainage system and major rivers and projects of Chhattisgarh
4. climate
5. Soil, natural vegetation, minerals, resources and industries
6. National Sanctuary and Industries of Chhattisgarh Major Tourist Places

Cartography (World, India, Chhattisgarh)

1. Latitude , longitude lines , remote sensing and geographic information system contour lines
2. Map Elements – Elements of Map

Part B:

Educational Psychology and Pedagogy: (Marks-15)

Educational Psychology

Study methods in educational psychology, human development, physical development, mental development, emotional development, social development, moral development, adolescent development and problems, guidance and counseling, learning, factors affecting learning, theories of learning, intelligence, creativity, children with special needs, individual differences, personality, personality theories, adjustment, motivation

Assessment and Evaluation in Education

1. Assessment and Evaluation: Meaning, definition, types of assessment techniques, basis of assessment, Demerits of the current assessment system, differences between assessment, evaluation, examination/testing, continuous and comprehensive evaluation.

2. Assessment of Subject-Based Learning: Assessment tools and strategies, assignments and types, construction and classification of achievement tests, planning, construction, and its steps.

3. Teachers' ability to create appropriate instruments: Designing assessment instruments, using class- and subject-specific instruments, characteristics and types

of imagination, objectives and types of appropriate assessment criteria, setting and using standards, types of feedback, creating and storing learner profiles, portfolios, rubrics, maintaining student profiles.

4. Testing: Types of tests, classification, essential qualities of a good test, administration, achievement tests in different subjects.

Pedagogy

1. Nature and scope of subjects: Concepts, history, subject aesthetics, and scope. Logical validity of conclusions

2. Student inquiry: Assessing student readiness, relating learning to real life, opportunities for independent problem solving, group learning strategies, and promoting classroom dialogue.

3. Aims and Achievable Objectives: Aims, objectives, and achievable objectives of education in the National Curriculum Framework 2005 and 2023, broad subject-specific objectives in school education.

4. Subject curriculum: Principles of curriculum design, curriculum at different school levels. State curriculum Framework

5. Lesson planning and methods for teaching and learning concepts: Various teaching methods and lesson plans, various learning resources (textbooks, audio-visual, multimedia, etc.).

Pedagogical Attitudes

1. Knowledge and learning: Meaning, nature, significance, various areas of knowledge, cultural knowledge, and values.

2. Teaching as a profession: Positive attitude, interest, and aptitude.

3. Understanding the teaching-learning process: Discipline, receptivity, teaching skills. Criteria for an effective teaching process, effective communication.

4. Constructivist teaching-learning process: Knowledge construction process, characteristics of a constructivist classroom, constructivist teachers.

5. Teacher professional development: Pre-service and in-service training programs, professional learning community, leadership qualities and group dynamics.

6. Gender perspective on education: Biological, social, and psychological determinants of gender, social psychology of gender roles, educational policies and gender concerns, gender issues in education.

Part C

General Studies & General Hindi/English **(25 Marks)**

सामान्य हिंदी (**अंक - 5)**

01. स्वर, व्यंजन, वर्तनी
02. लिंग, वचन, काल
03. संज्ञा, सर्वनाम, विशेषण, क्रिया, क्रिया विशेषण, कारक
04. समास रचना एवं प्रकार
05. संधि- स्वर, व्यंजन एवं विसर्ग संधि
06. व्याकरणिक अशुद्धियाँ
07. शब्द रचना उपसर्ग एवं प्रत्यय
08. शब्द प्रकार, तत्सम तदभव, देशज, विदेशी
09. पर्यायवाची, विलोम शब्द, अनेकार्थी शब्द, अनेक शब्दों या वाक्यांश के लिए एक शब्द

General English **(5 Marks)**

1. Number, Gender, Articles
2. Noun, Pronoun, Adjectives, Verb, Adverb
3. Preposition and Conjunctions
4. Synonyms, Antonyms, Homonyms,

5. One word substitution

6. Spellings, Prefixes, Suffixes

7. Proverb and Idioms

8. Active/Passive Voice

9. Sentences (Declarative, Negative, Interrogative, Imperative, Exclamatory)

10. Punctuations

General Mental Ability (05 Marks)

Reasoning, seeing relationships, analogies, numerical ability, spatial relationships, etc.

To test these factors, it will include questions like: spotting odds, numerical series, letter series, seeing relationships between letters, numbers and pictures, symbolic language, hidden pictures, squares and numbers, mathematical operations, matching pictures, various types of cube patterns, etc.

Computer Education (05 Marks)

- **Introduction to Computers:** What is a computer? Uses of computers in daily life (education, banking, healthcare, office work, communication, etc.), Importance and limitations of computers, General characteristics of computers.
- **Major Components of a Computer:** Introduction to hardware and software, CPU (Central Processing Unit), ALU, CU, Memory, Input devices (keyboard, mouse, scanner, touchpad, etc.), Output devices (monitor, printer, speakers, etc.).
- **Types of Printers**: Inkjet printers, LaserJet printers, Dot Matrix printers, Thermal and other modern printers.

- **Operating Systems:** Role of an operating system, MS-DOS, Commercial operating systems (Windows, MacOS, etc.), Open-source operating systems (Linux, Ubuntu, etc.).
- **Microsoft Office for Office Use:** MS Word – Creating, editing, and formatting documents.MS Excel – Tables, formulas, and charts.MS PowerPoint – Slide creation, design, and presentations.
- **Use of the Internet:** Introduction to the Internet, Inbox, Outbox, CC, BCC, Creating and sending emails, Searching online documents, Website browsing, General knowledge of various government department websites.
- **Antivirus and Computer Security:** What is a computer virus? Types of viruses, Damages caused by viruses, Importance of antivirus software, Safety and security measures.
- **Use of Multimedia:** Meaning of multimedia, Use of audio, video, and text, Applications of multimedia.
- **Storage Devices:** Primary and secondary storage, Hard disk, pen drive, CD/DVD, Introduction to cloud storage.
- **Search Engines and Online Platforms:** Google, YouTube, What is a search engine? How to search for required information? Safe and effective searching techniques.

General Knowledge (05 Marks)

15. Major Constitutional Provisions, Fundamental duties and rights under the Indian Constitution, Indian political system and constitutional rights, Right to Information (RTI), Cultural and national personalities, Democracy and elections, Lok Sabha and Rajya Sabha.
16. Indian History and National Movement, Indian civilization and culture, Historical events ,History of Indian independence from 1857 to 1947, Events that occurred after 1947.
17. Geography: Basic geography, Geography of India and the World.
18. Indian Economy: Social and economic development, Population perspective, Gross National Product (GNP) and per capita income, Five-Year Plans, Agriculture and rural development, Industrial development, Indian economy and banking system, Current economic events
19. General Science: Basic concepts related to physics, chemistry, biology, and botany

20. General Knowledge of Chhattisgarh: History of Chhattisgarh, Geography of Chhattisgarh, Political system, Economy, Government schemes, Awards and honors, Traditions, folk songs and music, important personalities, other important topics related to Chhattisgarh.
21. National Education Policy Part 1 School Education (NEP) 2020.

Lecturer - Economics

Total Marks – 100

Content	Marks
PART – A 1. Statistics in Economics	15
2. Growth of the Indian economy	15
3. Microeconomics	15
4. Macroeconomics	15
PART – B Educational Psychology, Assessment and Evaluation in Education, Pedagogy, Educational Attitude	15
Part - C Language Proficiency and General Study	25
TOTAL	**100**

PART – A

1. **Statistics in Economics** **Marks – 15**

- **Introduction**
  - Why Economics ? Consumption , Production and Distribution , Statistics in Economics , What is Statistics ? Applications of Statistics.
- **Collection , organization and presentation of data**
  - Collection of Data - Sources of Data Collection , Methods of Data Collection , Census and Sample Survey , Census and Sample , Random Sampling , Sampling and Non-Sampling Strategies , Census and Sample Survey of India (NSS) .
  - Organization of data - raw data , variables: continuous and discrete , frequency distribution, process of constructing frequency distribution, class interval related to the total study, what should be the number of classes , tally marks, finding class frequency by notation , loss of information , frequency distribution in unequal classes , frequency table , bivariate frequency distribution.
  - Presentation of data - Textual presentation of data , qualitative classification , quantitative classification , temporal classification , tabulation of data and parts of a table , graphical presentation of data , geometric diagrams - bar diagram , circle diagram , frequency diagram , histogram, frequency polygon , frequency curve , ogive arithmetic diagram.
  - Use of statistical tools and statistical methods
- **Measure of Central Tendency –**

- Arithmetic mean , continuous series , two interesting features of arithmetic mean , median , quartiles , percentiles , mode - calculation of mode , arithmetic mean , relative position of median and mode.
- Correlation - Measurement of correlation, types of correlation , methods of measuring correlation , scatter diagram, Karl Pearson's correlation coefficient , Spearman's rank correlation.
- Indices – Index, construction of index , grouped method , mean method of price ratios , some important indices – Consumer Price Index , Wholesale Price Index , Index of Industrial Production , Human Development Index , Sensitive Index , Issues in construction of index , Index in Economics.

2. Growth of the Indian economy **Marks - 15**

- **Growth of the Indian Economy and Development Policies and Experience (1947-90)**
  - Indian Economy on the eve of Independence - Low level of economic development under colonial rule , agricultural sector , industrial sector , foreign trade , demographic situation, occupational structure , infrastructure. Indian Economy (1950-90), Objectives of Five Year Plans , Agriculture , Industry and Trade , Trade Policy: Import Substitution
- **Economic reforms since 1991**
  - Liberalisation , Privatisation and Globalisation: A Review Background , Liberalisation , Privatisation , Globalisation , Indian Economy during Reforms A Review.
- **Current challenges of the Indian economy**
  - Human capital formation in India - Human capital, sources of human capital , human capital and human development , status of human capital formation in India , increase in public expenditure on education , future prospects.

- Rural Development - Rural development, credit and marketing in rural sectors , agricultural marketing system , diversification of productive activities , sustainable development and organic farming.
- Employment growth , informalisation and other issues - Labour and employment , people's participation in employment , self-employment and hired labour , employment in firms, factories and offices , prosperity and changing employment structure , informalisation of Indian labour force , unemployment , government and employment generation.

- **Comparative development experiences of India and its neighbouring countries**

  - Comparative development experiences of India and its neighbouring countries - a map of development path , demographic indicators , GDP and sectoral human development indicators , an assessment of development policies.

3. Microeconomics **Marks – 15**

- **Microeconomics :- An Introduction**

  - General economics , central problems of the economy , organization of economic activities-centrally planned economy , market economy. Positive and Ideal Economics , Micro Economics and Macro Economics.

- **Theory of Consumer Behaviour (Consumer Equilibrium)**

  - Utility - Cardinal utility analysis , Ordinal utility analysis. Consumer budget - Budget set and budget line , changes in the budget set. Consumer's optimal choice. Demand , demand curve and law of demand , derivation of demand curve from indifference curves and budget constraints , normal and inferior goods , substitutes and complements , shift in the demand curve , movement along the demand curve and shift in the demand curve. Market demand ,

elasticity of demand, elasticity in the direction of a linear demand curve , factors determining price elasticity of demand for a commodity , elasticity and expenditure.

- **production and cost**

  - Production function , short run and long run , total product , average product and marginal product-total product , average product , marginal product. Law of diminishing marginal product and law of variable proportions , shapes of total product , marginal product and average product curves , returns to scale , cost- short run cost , long run cost.

- **Theory of the Firm in Perfect Competition**

  - Perfect Competition: Defining Characteristics , Revenue , Profit Maximization Case-1 , Case-2 , Case-3 , Profit Maximization Problem: Display by diagram. Supply and Elasticity of supply, Supply curve of a firm, short run supply curve of a firm , long run supply curve of a firm , production breakeven point , normal profit and break-even point. Determinants of a firm's supply curve are technological progress and input prices. Market supply curve , price elasticity of supply, geometric method.

- **Market Equilibrium**

  - Equilibrium , excess demand , excess supply - market equilibrium: fixed number of firms , market equilibrium: free entry and exit. Applications: price ceiling , price ceiling.

4. Macroeconomics **Marks - 15**

- **Macroeconomics: An Introduction**

- Introduction and Accounting of National Income - Emergence of Macroeconomics
- Accounting for National Income – Some Basic Concepts of Macroeconomics
- circular flow of income
- Methods of calculating national income: product or value added method , expenditure method , income method , factor cost , base prices and market prices. Some macroeconomic identities , monetary and real GDP , GDP and welfare.

- **currency and banking**

  - Functions of a currency , money demand and money supply , credit creation by the banking system, hypothetical bank balance sheet , limits to credit creation and the money multiplier. Policy instruments for controlling money supply.

- **Determination of income and employment**

  - Aggregate demand and its components: consumption , income determination in a two-sector model. Determination of equilibrium income in the short run, macroeconomic equilibrium with a constant price level , the effect of changes in aggregate demand on income and output , the multiplier mechanism. Some other concepts.

- **Government Budget and Economy**

  - Objectives of the government budget , classification of receipts , measurement of government deficit. Government budget meaning and its components: capital account. Balanced , surplus, and deficit budgets.

- **open economy**

- Balance of payments: current account , capital account , balance of payments and deficit. Foreign exchange market: foreign exchange rate , exchange rate determination , merits and demerits of floating and fixed exchange rate systems , managed floating.

Part B:

- **Educational Psychology and Pedagogy: (Marks-15)**
- **Educational Psychology**
- Study methods in educational psychology, human development, physical development, mental development, emotional development, social development, moral development, adolescent development and problems, guidance and counseling, learning, factors affecting learning, theories of learning, intelligence, creativity, children with special needs, individual differences, personality, personality theories, adjustment, motivation
- **Assessment and Evaluation in Education**
- 1. Assessment and Evaluation: Meaning, definition, types of assessment techniques, basis of assessment, Demerits of the current assessment system, differences between assessment, evaluation, examination/testing, continuous and comprehensive evaluation.
- 2. Assessment of Subject-Based Learning: Assessment tools and strategies, assignments and types, construction and classification of achievement tests, planning, construction, and its steps.
- 3. Teachers' ability to create appropriate instruments: Designing assessment instruments, using class- and subject-specific instruments, characteristics and types of imagination, objectives and types of appropriate assessment criteria, setting and using standards, types of feedback, creating and storing learner profiles, portfolios, rubrics, maintaining student profiles.
- 4. Testing: Types of tests, classification, essential qualities of a good test, administration, achievement tests in different subjects.
- **Pedagogy**
- 1. Nature and scope of subjects: Concepts, history, subject aesthetics, and scope. Logical validity of conclusions

- 2. Student inquiry: Assessing student readiness, relating learning to real life, opportunities for independent problem solving, group learning strategies, and promoting classroom dialogue.
- 3. Aims and Achievable Objectives: Aims, objectives, and achievable objectives of education in the National Curriculum Framework 2005 and 2023, broad subject-specific objectives in school education.
- 4. Subject curriculum: Principles of curriculum design, curriculum at different school levels. State curriculum Framework
- 5. Lesson planning and methods for teaching and learning concepts: Various teaching methods and lesson plans, various learning resources (textbooks, audio-visual, multimedia, etc.).
- **Pedagogical Attitudes**
- 1. Knowledge and learning: Meaning, nature, significance, various areas of knowledge, cultural knowledge, and values.
- 2. Teaching as a profession: Positive attitude, interest, and aptitude.
- 3. Understanding the teaching-learning process: Discipline, receptivity, teaching skills. Criteria for an effective teaching process, effective communication.
- 4. Constructivist teaching-learning process: Knowledge construction process, characteristics of a constructivist classroom, constructivist teachers.
- 5. Teacher professional development: Pre-service and in-service training programs, professional learning community, leadership qualities and group dynamics.
- 6. Gender perspective on education: Biological, social, and psychological determinants of gender, social psychology of gender roles, educational policies and gender concerns, gender issues in education.

Part C

General Studies & General Hindi/English **(25 Marks)**

सामान्य हिंदी **(अंक - 5)**

01. स्वर, व्यंजन, वर्तनी
02. लिंग, वचन, काल

03. संज्ञा, सर्वनाम, विशेषण, क्रिया, क्रिया विशेषण, कारक
04. समास रचना एवं प्रकार
05. संधि- स्वर, व्यंजन एवं विसर्ग संधि
06. व्याकरणिक अशुद्धियाँ
07. शब्द रचना उपसर्ग एवं प्रत्यय
08. शब्द प्रकार, तत्सम तदभव, देशज, विदेशी
09. पर्यायवाची, विलोम शब्द, अनेकार्थी शब्द, अनेक शब्दों या वाक्यांश के लिए एक शब्द

General English **(5 Marks)**

1. Number, Gender, Articles
2. Noun, Pronoun, Adjectives, Verb, Adverb
3. Preposition and Conjunctions
4. Synonyms, Antonyms, Homonyms,
5. One word substitution
6. Spellings, Prefixes, Suffixes
7. Proverb and Idioms
8. Active/Passive Voice
9. Sentences (Declarative, Negative, Interrogative, Imperative, Exclamatory)
10. Punctuations

General Mental Ability **(05 Marks)**

Reasoning, seeing relationships, analogies, numerical ability, spatial relationships, etc.

To test these factors, it will include questions like: spotting odds, numerical series, letter series, seeing relationships between letters, numbers and pictures, symbolic

language, hidden pictures, squares and numbers, mathematical operations, matching pictures, various types of cube patterns, etc.

Computer Education (05 Marks)

- **Introduction to Computers:** What is a computer? Uses of computers in daily life (education, banking, healthcare, office work, communication, etc.), Importance and limitations of computers, General characteristics of computers.
- **Major Components of a Computer:** Introduction to hardware and software, CPU (Central Processing Unit), ALU, CU, Memory, Input devices (keyboard, mouse, scanner, touchpad, etc.), Output devices (monitor, printer, speakers, etc.).
- **Types of Printers**: Inkjet printers, LaserJet printers, Dot Matrix printers, Thermal and other modern printers.
- **Operating Systems:** Role of an operating system, MS-DOS, Commercial operating systems (Windows, MacOS, etc.), Open-source operating systems (Linux, Ubuntu, etc.).
- **Microsoft Office for Office Use:** MS Word – Creating, editing, and formatting documents.MS Excel – Tables, formulas, and charts.MS PowerPoint – Slide creation, design, and presentations.
- **Use of the Internet:** Introduction to the Internet, Inbox, Outbox, CC, BCC, Creating and sending emails, Searching online documents, Website browsing, General knowledge of various government department websites.
- **Antivirus and Computer Security:** What is a computer virus? Types of viruses, Damages caused by viruses, Importance of antivirus software, Safety and security measures.
- **Use of Multimedia:** Meaning of multimedia, Use of audio, video, and text, Applications of multimedia.
- **Storage Devices:** Primary and secondary storage, Hard disk, pen drive, CD/DVD, Introduction to cloud storage.

- **Search Engines and Online Platforms:** Google, YouTube, What is a search engine? How to search for required information? Safe and effective searching techniques.

General Knowledge (05 Marks)

22. Major Constitutional Provisions, Fundamental duties and rights under the Indian Constitution, Indian political system and constitutional rights, Right to Information (RTI), Cultural and national personalities, Democracy and elections, Lok Sabha and Rajya Sabha.
23. Indian History and National Movement, Indian civilization and culture, Historical events ,History of Indian independence from 1857 to 1947, Events that occurred after 1947.
24. Geography: Basic geography, Geography of India and the World.
25. Indian Economy: Social and economic development, Population perspective, Gross National Product (GNP) and per capita income, Five-Year Plans, Agriculture and rural development, Industrial development, Indian economy and banking system, Current economic events
26. General Science: Basic concepts related to physics, chemistry, biology, and botany
27. General Knowledge of Chhattisgarh: History of Chhattisgarh, Geography of Chhattisgarh, Political system, Economy, Government schemes, Awards and honors, Traditions, folk songs and music, important personalities, other important topics related to Chhattisgarh.
28. National Education Policy Part 1 School Education (NEP) 2020.

Lecturer- History

Content	Marks
Part A	
1. Ancient Indian History	15
2. Medieval India	15
3. Modern India Of History	20
4. European History	10
Part B	
Educational Psychology, Assessment & Evaluation in Education, Pedagogy, Educational Aptitude	15
Part C	
Language Proficiency and General Study	25
Total	**100**

Part A Marks - 15

❖ Harappa Civilization -

- Harappan archaeology Of Development Of Chief phase

- employed City
- Economic , social , religious , political Arrangement
- Science , Art And craft
- Civilization Of Downfall

❖ Mahajanapadas period -

- 16 Mahajanapadas
- Maurya Empire - Ruler , Administration , Archeology
- King Ashoka of Religion concept
- South Of State – Chola , Chera , Pandy
- confluence Literature
- Post-Mauryan Period - Shakas , Kushans

❖ Secret Empire -

- Administrative Arrangement
- social , economic , religious condition
- Art And Culture
- subcontinent And His Outside Of Business

❖ sisterhood Caste And Square (600 BCE to 600 CE)

- Mahabharata period
- Marriage Of Type And Rule
- clan , caste Arrangement
- Property Of rights
- literary Source

❖ Cultural Evolution 600 BCE to 600 CE

- Buddhist Religion , Jain Dharma , Stupa
- architecture Art - (temples , sculptures , caves)
- mythological Hindu Religion Of Udaya - Shaiva , Vaishnav , Devi worship legacy

Medieval India

Marks - 15

- ❖ Devotion And Sufi Tradition -
  - devotion Movement - Principles promoter
  - South India In devotion Agitation
  - Sufi Don't Of Development theory , promoter
  - Khanqah , Silsila
- ❖ Vijayanagar Empire -
  - Administrative social , economic , religious condition
  - architecture Art
- ❖ Medieval Agriculture And Society
  - Ain - e - Akbari
  - Farmer And Agriculture Production
  - landlord , land revenue System

Modern India Of History

Marks - 20

- ❖ Colonialism And Rural (Govt. record) -
  - Permanent settlement
  - Fifth Report
  - hills community And Their Agitation
  - Santhal community And Their Rebellion
  - Bombay And Deccan Of various Rebellion
- ❖ 1857 Rebellion -
  - of 1857 Rebellion Of various Reason
  - events , details , consequences
  - Leader And Followers
  - Rebellion Of Form

❖ National Agitation -

- Indian National Congress of thinking And Program
- farmer Movement - Kheda , Champaran Agitation
- indigenous Agitation
- Indian Revolutionary Agitation
- Gandhian people Agitation
- of 1935 Act And His after
- 1945 Wavell to 1947 Mountbatten Plan till
- India Freedom And Division of Side

❖ Post independence India

- Division Of after Rehabilitation
- Indian Princely states Of merger
- Constitution Of Construction
- Power Segregation , language Controversy

❖History OF Chhattisgarh

- Chhattisgarh State Construction of background
- Chhattisgarh geographical Situation And Naming
- Chhattisgarh Chief Dynasty , Maratha And British Government
- Kalachuri carpet administrative , economic , social activities
- Chhattisgarh National Agitation In Contribution
- Chhattisgarh Religion And sect , Education , literature
- Chhattisgarh Minerals Industry
- Chhattisgarh Architecture , Tourism And pilgrimage site
- Chhattisgarh tribal community And Folk Life

European History
Marks - 10

- Industrial Revolution and Industrialization , colonialism
- First and Second World War
- League of Nations and United Nations

❖ Nazism And Fascism , colonies Of elimination And Cold War

Part B:

Educational Psychology and Pedagogy: (Marks-15)

Educational Psychology

Study methods in educational psychology, human development, physical development, mental development, emotional development, social development, moral development, adolescent development and problems, guidance and counseling, learning, factors affecting learning, theories of learning, intelligence, creativity, children with special needs, individual differences, personality, personality theories, adjustment, motivation

Assessment and Evaluation in Education

1. Assessment and Evaluation: Meaning, definition, types of assessment techniques, basis of assessment, Demerits of the current assessment system, differences between assessment, evaluation, examination/testing, continuous and comprehensive evaluation.

2. Assessment of Subject-Based Learning: Assessment tools and strategies, assignments and types, construction and classification of achievement tests, planning, construction, and its steps.

3. Teachers' ability to create appropriate instruments: Designing assessment instruments, using class- and subject-specific instruments, characteristics and types

of imagination, objectives and types of appropriate assessment criteria, setting and using standards, types of feedback, creating and storing learner profiles, portfolios, rubrics, maintaining student profiles.

4. Testing: Types of tests, classification, essential qualities of a good test, administration, achievement tests in different subjects.

Pedagogy

1. Nature and scope of subjects: Concepts, history, subject aesthetics, and scope. Logical validity of conclusions

2. Student inquiry: Assessing student readiness, relating learning to real life, opportunities for independent problem solving, group learning strategies, and promoting classroom dialogue.

3. Aims and Achievable Objectives: Aims, objectives, and achievable objectives of education in the National Curriculum Framework 2005 and 2023, broad subject-specific objectives in school education.

4. Subject curriculum: Principles of curriculum design, curriculum at different school levels. State curriculum Framework

5. Lesson planning and methods for teaching and learning concepts: Various teaching methods and lesson plans, various learning resources (textbooks, audio-visual, multimedia, etc.).

Pedagogical Attitudes

1. Knowledge and learning: Meaning, nature, significance, various areas of knowledge, cultural knowledge, and values.

2. Teaching as a profession: Positive attitude, interest, and aptitude.

3. Understanding the teaching-learning process: Discipline, receptivity, teaching skills. Criteria for an effective teaching process, effective communication.

4. Constructivist teaching-learning process: Knowledge construction process, characteristics of a constructivist classroom, constructivist teachers.

5. Teacher professional development: Pre-service and in-service training programs, professional learning community, leadership qualities and group dynamics.

6. Gender perspective on education: Biological, social, and psychological determinants of gender, social psychology of gender roles, educational policies and gender concerns, gender issues in education.

Part C

General Studies & General Hindi/English **(25 Marks)**

सामान्य हिंदी **(अंक - 5)**

01. स्वर, व्यंजन, वर्तनी
02. लिंग, वचन, काल
03. संज्ञा, सर्वनाम, विशेषण, क्रिया, क्रिया विशेषण, कारक
04. समास रचना एवं प्रकार
05. संधि- स्वर, व्यंजन एवं विसर्ग संधि
06. व्याकरणिक अशुद्धियाँ
07. शब्द रचना उपसर्ग एवं प्रत्यय
08. शब्द प्रकार, तत्सम तदभव, देशज, विदेशी
09. पर्यायवाची, विलोम शब्द, अनेकार्थी शब्द, अनेक शब्दों या वाक्यांश के लिए एक शब्द

General English **(5 Marks)**

1. Number, Gender, Articles
2. Noun, Pronoun, Adjectives, Verb, Adverb
3. Preposition and Conjunctions
4. Synonyms, Antonyms, Homonyms,
5. One word substitution

6. Spellings, Prefixes, Suffixes

7. Proverb and Idioms

8. Active/Passive Voice

9. Sentences (Declarative, Negative, Interrogative, Imperative, Exclamatory)

10. Punctuations

General Mental Ability **(05 Marks)**

Reasoning, seeing relationships, analogies, numerical ability, spatial relationships, etc.

To test these factors, it will include questions like: spotting odds, numerical series, letter series, seeing relationships between letters, numbers and pictures, symbolic language, hidden pictures, squares and numbers, mathematical operations, matching pictures, various types of cube patterns, etc.

Computer Education **(05 Marks)**

- **Introduction to Computers:** What is a computer? Uses of computers in daily life (education, banking, healthcare, office work, communication, etc.), Importance and limitations of computers, General characteristics of computers.
- **Major Components of a Computer:** Introduction to hardware and software, CPU (Central Processing Unit), ALU, CU, Memory, Input devices (keyboard, mouse, scanner, touchpad, etc.), Output devices (monitor, printer, speakers, etc.).

- **Types of Printers**: Inkjet printers, LaserJet printers, Dot Matrix printers, Thermal and other modern printers.
- **Operating Systems:** Role of an operating system, MS-DOS, Commercial operating systems (Windows, MacOS, etc.), Open-source operating systems (Linux, Ubuntu, etc.).
- **Microsoft Office for Office Use:** MS Word – Creating, editing, and formatting documents.MS Excel – Tables, formulas, and charts.MS PowerPoint – Slide creation, design, and presentations.
- **Use of the Internet:** Introduction to the Internet, Inbox, Outbox, CC, BCC, Creating and sending emails, Searching online documents, Website browsing, General knowledge of various government department websites.
- **Antivirus and Computer Security:** What is a computer virus? Types of viruses, Damages caused by viruses, Importance of antivirus software, Safety and security measures.
- **Use of Multimedia:** Meaning of multimedia, Use of audio, video, and text, Applications of multimedia.
- **Storage Devices:** Primary and secondary storage, Hard disk, pen drive, CD/DVD, Introduction to cloud storage.
- **Search Engines and Online Platforms:** Google, YouTube, What is a search engine? How to search for required information? Safe and effective searching techniques.

General Knowledge **(05 Marks)**

29. Major Constitutional Provisions, Fundamental duties and rights under the Indian Constitution, Indian political system and constitutional rights, Right to Information (RTI), Cultural and national personalities, Democracy and elections, Lok Sabha and Rajya Sabha.
30. Indian History and National Movement, Indian civilization and culture, Historical events ,History of Indian independence from 1857 to 1947, Events that occurred after 1947.
31. Geography: Basic geography, Geography of India and the World.

32. Indian Economy: Social and economic development, Population perspective, Gross National Product (GNP) and per capita income, Five-Year Plans, Agriculture and rural development, Industrial development, Indian economy and banking system, Current economic events
33. General Science: Basic concepts related to physics, chemistry, biology, and botany
34. General Knowledge of Chhattisgarh: History of Chhattisgarh, Geography of Chhattisgarh, Political system, Economy, Government schemes, Awards and honors, Traditions, folk songs and music, important personalities, other important topics related to Chhattisgarh.
35. National Education Policy Part 1 School Education (NEP) 2020.

Lecturer – Political Science

(Total Marks- 100)

Subject Matter	Marks
Part A 1. Constitution and Governance of India	30
2. Contemporary world politics	15
3. Politics in independent India	15
Part B Educational Psychology, Assessment & Evaluation in Education, Pedagogy, Educational Aptitude	15
Part C General Study	25
Total	**100**

Part - A

Constitution of India (Marks - 30)

- Freedom - What is freedom ? The ideal of freedom . Why are restrictions necessary ? The “harm principle." Positive and negative liberty . Freedom of expression.
- Equality - What is equality ? Importance of equality, equality of opportunity , natural and social inequalities , three dimensions of equality: political equality , social equality , economic equality , formal promotion of equality, establishment of equality , equality through differential treatment , affirmative action.

- Social Justice - What is justice ? Equal treatment of equals , proportional justice , special consideration of special needs , equitable distribution , Rawls's theory of justice , the pursuit of social justice , free market versus state intervention , and the Preamble to the Universal Declaration of Human Rights.

- Rights - What are rights ? Where do rights come from ? Legal rights and state power , types of rights , rights and responsibilities.

- Citizenship - Role , Full and Equal Membership , Equal Rights , Citizen and Nation , Universal Citizenship , World Citizenship .

- Nationalism - Introduction to nationalism , nation and nationalism , shared beliefs , history , territory , shared political ideals , shared political identity , national self-determination , nationalism and pluralism , Rabindranath Tagore's critique of nationalism.
- Secularism - What is secularism , dominance among religions , dominance within religion , secular state , European model of secularism , Indian model of secularism , Criticisms of Indian secularism

- Constitution - Why and How ? Need for a Constitution, Specifics of Decision-Making Power , Limitations on the Powers of the Government , Aspirations and Goals of Society , Enabling Provisions of the Constitution , Basic Identity of the Nation , Authority of the Constitution , Method of Implementation of the Constitution, Fundamental Provisions of the Constitution , Controversy over the Constitution of Nepal , Balanced Framework of Institutions , Indian Constitution Making Process, Functioning of the Constituent Assembly, Legacy of the National Movement , Institutional Arrangements, Provisions of Constitutions of Various Countries.
- Elections and Representation - Elections and Democracy , Electoral System in India , Proportional Representation , Why was the system of "highest number of votes won" adopted in India ? Reservation of constituencies , Free and Fair Elections , Universal Adult Franchise and Right to Contest Elections , Independent Election Commission.
- Executive- Executive, Types of Executive, Semi-Presidential Executive of Sri Lanka , Parliamentary Executive in India , Power and Status of the President , Privileges of the President , Role of the President in Appointment of the Prime Minister, Vice President of India, Prime Minister and Council of Ministers, Size of Council of Ministers, Permanent Executive - Bureaucracy, Classification of Civil Services.
- Legislature - Parliament, House of Parliament his Speciality And Powers, Parliament, Executive Control, Means of Parliamentary Control , Parliamentary Committees
- Judiciary - Independent Judiciary, Independence of Judiciary , Appointment of Judges , Removal of Judges , Structure of Judiciary , Jurisdiction of Supreme Court, Judicial Activism , Judiciary and Rights , Judiciary and Parliament , Legal Services.
- Federalism - Federalism in Nigeria , Federalism in the West Indies , Federalism in the Indian Constitution , Division of Powers , Strong Central Government and Federalism , Tensions in the Indian Federal System , Centre-State Relations , Demand

for Autonomy , Role of Governor and President's Rule , Demand for New States , Inter-State Disputes , Special Provisions , Jammu and Kashmir.

- Local Government - Development of local government in India, local government in independent India, 73rd and 74th Constitutional Amendments and their implementation, three-tier structure, elections, reservations, transfer of subjects, some subjects listed in the Eleventh Schedule, State Election Commissioner, State Finance Commission.

Contemporary world politics (Marks - 15)

- The end of bipolarity. What was the Soviet system ? Gorbachev and the disintegration of the Soviet Union . Why did the Soviet Union disintegrate ? The consequences of disintegration . Shock therapy after communist rule. The consequences of shock therapy . Conflict and tension . Former communist countries and India.
- Contemporary South Asia - South Asia, Military and Democracy in Pakistan , Democracy in Bangladesh , Monarchy and Democracy in Nepal , Ethnic Conflict and Democracy in Sri Lanka , India-Pakistan Conflict , India and its Neighbours , Peace and Cooperation.
- International Organizations - International Organizations, Evolution of the United Nations, Reforms in the United Nations after the Cold War : Reforms in Processes and Structures, Jurisdiction of the United Nations, Reforms in the United Nations and India, United Nations in a Unipolar World.
- Security in the contemporary world - Security, Traditional Concepts - External Security and Internal Security, Traditional Approaches to Security, Unconventional Concepts of Security, New Sources of Threat, Human Rights, Cooperative Security, India - Security Strategies.
- Globalization- Concept of Globalization, Causes of Globalization, Political Impact, Economic Impact, Cultural

Impact, India and Globalization, Resistance to Globalization, India and Resistance to Globalization.

Politics in independent India (Marks - 15)

- Challenges of nation building and partition, displacement and rehabilitation, challenges of partition for the new nation, three challenges, process, consequences of partition , problem of merger of princely states, government's view, Hyderabad, Manipur, reorganization of states.
- Era of one-party dominance - Challenge of establishing democracy, dominance of Congress in the first three elections, Socialist Party, The nature of Congress dominance The Congress as a social and ideological alliance The Communist Party of India, Cohesion and tolerance among factions, Bharatiya Jana Sangh, the emergence of opposition parties, the Swatantra Party.

- Politics of planned development - political decisions and development, political conflict, concepts of development, Planning Commission, planning, initial steps - First Five Year Plan, rapid pace of industrialization, main controversies - agriculture vs. industry, private sector vs. public sector, main outcomes - foundation, land reforms, food crisis, Green Revolution, later changes.
- India's foreign policy and relations with other countries - International context , policy of non-alignment , role of Nehru , distance from two camps , relations with China , Pakistan , Japan India's Nuclear Policy.
- Regional Aspirations - Region and Nation, Indian Government's View, Range of Tensions, Roots of Jammu & Kashmir Problem, Dravidian Movement, External and Internal Disputes, Politics: Since 1948, Insurgency and After, 2002 and Beyond, Punjab Political Context, Cycle of Violence, Towards Peace, Northeast, Demand for Autonomy, Separatist Movements, Movements Against Outsiders, Consolidation and National Integration, Liberation of Goa.

- Indian Politics: New Changes: 1990s, Coalition Era, Decline of Congress, Central Government after 1989, Coalition Politics, Political Rise of Other Backward Classes, Implementation of Mandal, Mandal Commission, Political Consequences, Communalism, Secularism and Democracy, Ayodhya Dispute, Demolition and Aftermath, Emergence of a New Consensus, 2004 Lok Sabha Elections, Growing Consensus, Position of Various Parties in the 17th Lok Sabha.

Part B:

Educational Psychology and Pedagogy: (Marks-15)

Educational Psychology

Study methods in educational psychology, human development, physical development, mental development, emotional development, social development, moral development, adolescent development and problems, guidance and counseling, learning, factors affecting learning, theories of learning, intelligence, creativity, children with special needs, individual differences, personality, personality theories, adjustment, motivation

Assessment and Evaluation in Education

1. Assessment and Evaluation: Meaning, definition, types of assessment techniques, basis of assessment, Demerits of the current assessment system, differences between assessment, evaluation, examination/testing, continuous and comprehensive evaluation.

2. Assessment of Subject-Based Learning: Assessment tools and strategies, assignments and types, construction and classification of achievement tests, planning, construction, and its steps.

3. Teachers' ability to create appropriate instruments: Designing assessment instruments, using class- and subject-specific instruments, characteristics and types of imagination, objectives and types of appropriate assessment criteria, setting and

using standards, types of feedback, creating and storing learner profiles, portfolios, rubrics, maintaining student profiles.

4. Testing: Types of tests, classification, essential qualities of a good test, administration, achievement tests in different subjects.

Pedagogy

1. Nature and scope of subjects: Concepts, history, subject aesthetics, and scope. Logical validity of conclusions

2. Student inquiry: Assessing student readiness, relating learning to real life, opportunities for independent problem solving, group learning strategies, and promoting classroom dialogue.

3. Aims and Achievable Objectives: Aims, objectives, and achievable objectives of education in the National Curriculum Framework 2005 and 2023, broad subject-specific objectives in school education.

4. Subject curriculum: Principles of curriculum design, curriculum at different school levels. State curriculum Framework

5. Lesson planning and methods for teaching and learning concepts: Various teaching methods and lesson plans, various learning resources (textbooks, audio-visual, multimedia, etc.).

Pedagogical Attitudes

1. Knowledge and learning: Meaning, nature, significance, various areas of knowledge, cultural knowledge, and values.

2. Teaching as a profession: Positive attitude, interest, and aptitude.

3. Understanding the teaching-learning process: Discipline, receptivity, teaching skills. Criteria for an effective teaching process, effective communication.

4. Constructivist teaching-learning process: Knowledge construction process, characteristics of a constructivist classroom, constructivist teachers.

5. Teacher professional development: Pre-service and in-service training programs, professional learning community, leadership qualities and group dynamics.

6. Gender perspective on education: Biological, social, and psychological determinants of gender, social psychology of gender roles, educational policies and gender concerns, gender issues in education.

Part C

General Studies & General Hindi/English **(25 Marks)**

General Mental Ability **(10 Marks)**

Reasoning, seeing relationships, analogies, numerical ability, spatial relationships, etc.

To test these factors, it will include questions like: spotting odds, numerical series, letter series, seeing relationships between letters, numbers and pictures, symbolic language, hidden pictures, squares and numbers, mathematical operations, matching pictures, various types of cube patterns, etc.

Computer Education **(05 Marks)**

- **Introduction to Computers:** What is a computer? Uses of computers in daily life (education, banking, healthcare, office work, communication, etc.), Importance and limitations of computers, General characteristics of computers.
- **Major Components of a Computer:** Introduction to hardware and software, CPU (Central Processing Unit), ALU, CU, Memory, Input devices (keyboard, mouse, scanner, touchpad, etc.), Output devices (monitor, printer, speakers, etc.).

- **Types of Printers**: Inkjet printers, LaserJet printers, Dot Matrix printers, Thermal and other modern printers.
- **Operating Systems:** Role of an operating system, MS-DOS, Commercial operating systems (Windows, MacOS, etc.), Open-source operating systems (Linux, Ubuntu, etc.).
- **Microsoft Office for Office Use:** MS Word – Creating, editing, and formatting documents.MS Excel – Tables, formulas, and charts.MS PowerPoint – Slide creation, design, and presentations.
- **Use of the Internet:** Introduction to the Internet, Inbox, Outbox, CC, BCC, Creating and sending emails, Searching online documents, Website browsing, General knowledge of various government department websites.
- **Antivirus and Computer Security:** What is a computer virus? Types of viruses, Damages caused by viruses, Importance of antivirus software, Safety and security measures.
- **Use of Multimedia:** Meaning of multimedia, Use of audio, video, and text, Applications of multimedia.
- **Storage Devices:** Primary and secondary storage, Hard disk, pen drive, CD/DVD, Introduction to cloud storage.
- **Search Engines and Online Platforms:** Google, YouTube, What is a search engine? How to search for required information? Safe and effective searching techniques.

General Knowledge (10 Marks)

36. Major Constitutional Provisions, Fundamental duties and rights under the Indian Constitution, Indian political system and constitutional rights, Right to Information (RTI), Cultural and national personalities, Democracy and elections, Lok Sabha and Rajya Sabha.
37. Indian History and National Movement, Indian civilization and culture, Historical events ,History of Indian independence from 1857 to 1947, Events that occurred after 1947.
38. Geography: Basic geography, Geography of India and the World.
39. Indian Economy: Social and economic development, Population perspective, Gross National Product (GNP) and per capita income, Five-Year Plans, Agriculture and rural development, Industrial development, Indian economy and banking system, Current economic events

40. General Science: Basic concepts related to physics, chemistry, biology, and botany
41. General Knowledge of Chhattisgarh: History of Chhattisgarh, Geography of Chhattisgarh, Political system, Economy, Government schemes, Awards and honors, Traditions, folk songs and music, important personalities, other important topics related to Chhattisgarh.
42. National Education Policy Part 1 School Education (NEP) 2020.

Lecturer – Social Science

TOTAL MARKS-100

S.NO.	CONTENT	MARKS
1	PART A History	15
2	Geography	15
3	Economics	15
4	Political Science	15
5	PART B 1.Educational Psychology, Assessment and Evaluation in Education, Pedagogy, Teaching Aptitude PART C 2. General Studies	15 25
	TOTAL	100

History 15 Marks

Unit 1: Modern Culture and Religious Reforms

The emergence of modern culture in Europe and India (1300–1750), Renaissance, painting and sculpture, Scientific Revolution, maritime voyages. Religious Reformation and Protestantism; diversity in Indian-Islamic societies; Catholic Church and Reformation; Modern Age.

Unit 2: Revolutions and Colonialism

Democratic and nationalist revolutions — English struggle, American Independence, French Revolution, nationalism in Europe and Asia, Indian Nationalist Movement. Industrial Revolution — Britain, Germany and India. Colonialism — Asia, China, Africa and India.

Unit 3: World Wars and the Contemporary World

First World War — causes, treaties, technology and Treaty of Versailles. The period between the two World Wars — Russian Revolution and Great Depression. Nazism in Germany and the Second World War.

Unit 4: Cold War and Communication

End of colonialism and the Cold War: bipolarity (India, Indonesia, Vietnam and Africa), dissolution of the Soviet Union. Communication media in the 20th century.

Geography 15 Marks

Unit 1: Cartography and Introduction to India

Maps, scale, diagrams/charts.
India: location, extent, neighbouring countries, Northeastern mountain ranges, glaciers, Kashmir Valley, shifting cultivation, Northern Great Plains, Peninsular

Plateau (minerals), coastal plains and island groups, desert, water resources, climate of India, rivers and drainage system.

Unit 2: Natural Vegetation

Natural vegetation and wildlife communities, classification of forests, their utilization and conservation.

Unit 3: Drainage System

Geography of Chhattisgarh — complete study.

Unit 4: Resources and Development

Land resources, soil deposition and conservation.
Agriculture: crop seasons, land use.
Minerals and industrialization: factors responsible for establishment, major industrial regions.
Human resources: population and development.

Unit 5: Human Settlements

Rural and urban settlements, factors responsible for their origin, urbanization and its problems.

Economics 15 Marks

Unit 1: Introduction to Economics

Economic and non-economic activities, sectors of the economy, GST, Gross Domestic Product (GDP), VAT, national income, per capita income.

Unit 2: Nature of the Economy

Challenges of agriculture, organic farming, marketing of agricultural products, handicrafts and cottage industries, employment and production process, skilled and unskilled labour, capital.

Unit 3: Development, Money and Credit

Understanding development, income distribution, Human Development Index, education and maternal mortality rate. Creation of money, functions of banks, study of RBI. Budget — revenue/capital receipts and expenditure, fiscal deficit.

Unit 4: Food Security and Globalization

Public Distribution System, Mid-Day Meal, Body Mass Index (BMI). Globalization: multinational companies, foreign trade and foreign investment.

Political Science 15 Marks

Unit 1: Making of the Constitution of India

Constituent Assembly, Preamble, Union Legislature — functions of Parliament, Prime Minister, President, Supreme Court, Election Commission, Parliamentary system, Fundamental Rights and Duties, Directive Principles of State Policy, State Government — Legislative Assembly, Chief Minister and Governor, Panchayati Raj and Urban Local Government.

Unit 2: Democracy and Its Functioning

First General Election, Hindu Code Bill, abolition of Zamindari system, reorganization of states, foreign policy, regional parties, language movements, voting system, pressure groups, labour unions and women's organizations.

Unit 3: Social Movements

Movements related to social issues, Right to Information, disarmament movement.

Unit 4: Expansion of Democracy

Struggles against authoritarianism — Libya and Myanmar; credibility/challenges of democracy.
Rights: constitutional protection, Human Rights Commission, protection of children's rights and gender equality.

Exam for Lecturer Recuirtment

Part B:

Educational Psychology and Pedagogy: (Marks-15)

Educational Psychology

Study methods in educational psychology, human development, physical development, mental development, emotional development, social development, moral development, adolescent development and problems, guidance and counseling, learning, factors affecting learning, theories of learning, intelligence, creativity, children with special needs, individual differences, personality, personality theories, adjustment, motivation

Assessment and Evaluation in Education

1. Assessment and Evaluation: Meaning, definition, types of assessment techniques, basis of assessment, Demerits of the current assessment system, differences between

assessment, evaluation, examination/testing, continuous and comprehensive evaluation.

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4. Testing: Types of tests, classification, essential qualities of a good test, administration, achievement tests in different subjects.

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1. Nature and scope of subjects: Concepts, history, subject aesthetics, and scope. Logical validity of conclusions

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4. Subject curriculum: Principles of curriculum design, curriculum at different school levels. State curriculum Framework

5. Lesson planning and methods for teaching and learning concepts: Various teaching methods and lesson plans, various learning resources (textbooks, audio-visual, multimedia, etc.).

Pedagogical Attitudes

1. Knowledge and learning: Meaning, nature, significance, various areas of knowledge, cultural knowledge, and values.

2. Teaching as a profession: Positive attitude, interest, and aptitude.

3. Understanding the teaching-learning process: Discipline, receptivity, teaching skills. Criteria for an effective teaching process, effective communication.

4. Constructivist teaching-learning process: Knowledge construction process, characteristics of a constructivist classroom, constructivist teachers.

5. Teacher professional development: Pre-service and in-service training programs, professional learning community, leadership qualities and group dynamics.

6. Gender perspective on education: Biological, social, and psychological determinants of gender, social psychology of gender roles, educational policies and gender concerns, gender issues in education.

Part C

General Studies (25 Marks)

General Mental Ability (10 Marks)

Reasoning, seeing relationships, analogies, numerical ability, spatial relationships, etc.

To test these factors, it will include questions like: spotting odds, numerical series, letter series, seeing relationships between letters, numbers and pictures, symbolic language, hidden pictures, squares and numbers, mathematical operations, matching pictures, various types of cube patterns, etc.

Computer Education (05 Marks)

- **Introduction to Computers:** What is a computer? Uses of computers in daily life (education, banking, healthcare, office work, communication, etc.),

Importance and limitations of computers, General characteristics of computers.

- **Major Components of a Computer:** Introduction to hardware and software, CPU (Central Processing Unit), ALU, CU, Memory, Input devices (keyboard, mouse, scanner, touchpad, etc.), Output devices (monitor, printer, speakers, etc.).
- **Types of Printers**: Inkjet printers, LaserJet printers, Dot Matrix printers, Thermal and other modern printers.
- **Operating Systems:** Role of an operating system, MS-DOS, Commercial operating systems (Windows, MacOS, etc.), Open-source operating systems (Linux, Ubuntu, etc.).
- **Microsoft Office for Office Use:** MS Word – Creating, editing, and formatting documents.MS Excel – Tables, formulas, and charts.MS PowerPoint – Slide creation, design, and presentations.
- **Use of the Internet:** Introduction to the Internet, Inbox, Outbox, CC, BCC, Creating and sending emails, Searching online documents, Website browsing, General knowledge of various government department websites.
- **Antivirus and Computer Security:** What is a computer virus? Types of viruses, Damages caused by viruses, Importance of antivirus software, Safety and security measures.
- **Use of Multimedia:** Meaning of multimedia, Use of audio, video, and text, Applications of multimedia.
- **Storage Devices:** Primary and secondary storage, Hard disk, pen drive, CD/DVD, Introduction to cloud storage.
- **Search Engines and Online Platforms:** Google, YouTube, What is a search engine? How to search for required information? Safe and effective searching techniques.

General Knowledge **(10 Marks)**

43. Major Constitutional Provisions, Fundamental duties and rights under the Indian Constitution, Indian political system and constitutional rights, Right to Information (RTI), Cultural and national personalities, Democracy and elections, Lok Sabha and Rajya Sabha.

44. Indian History and National Movement, Indian civilization and culture, Historical events ,History of Indian independence from 1857 to 1947, Events that occurred after 1947.
45. Geography: Basic geography, Geography of India and the World.
46. Indian Economy: Social and economic development, Population perspective, Gross National Product (GNP) and per capita income, Five-Year Plans, Agriculture and rural development, Industrial development, Indian economy and banking system, Current economic events
47. General Science: Basic concepts related to physics, chemistry, biology, and botany
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49. National Education Policy Part 1 School Education (NEP) 2020.

Lecturer - Mathematics

Total Marks – 100

Content	Marks
PART – A **1.** Sets , Relations & Functions , Trigonometric Functions, Inverse Trigonometric Functions, Complex Numbers and Quadratic Equations.	15
2. Linear Inequalities , Permutations and Combinations Binomial Theorem, Sequence and Series.	10
3. Straight Lines, Conic Sections, Three-dimensional Geometry, Limits and Derivatives.	10
4. Statistics, Probability, Matrices, Determinants.	10
5.Continuity and Differentiability, Applications of Derivatives , Integrals , Applications of the Integrals , Differential Equations	10
6. Vectors, Linear Programming.	05
PART – B Educational Psychology, Assessment and Evaluation in Education, Pedagogy, Educational Attitude	15
Part - C Language Proficiency and General Study	25
TOTAL	**100**

Sets

Sets and their representations, Empty set, Finite and Infinite sets, Equal sets, Subsets. Subsets of a set of real numbers especially intervals (with notations). Universal set. Venn diagrams. Union and Intersection of sets. Difference of sets. Complement of a set. Properties of Complement.

Relations & Functions

Ordered pairs. Cartesian product of sets. Number of elements in the Cartesian product of two finite sets. Cartesian product of the set of reals with itself (upto R x R x R). Definition of relation, pictorial diagrams, domain, co-domain and range of a relation. Function as a special type of relation. Pictorial representation of a function, domain, co-domain and range of a function. Real valued functions, domain and range of these functions, constant, identity, polynomial, rational, modulus, signum, exponential, logarithmic and greatest integer functions, with their graphs. Sum, difference, product and quotients of functions. Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and onto functions.

Trigonometric Functions

Positive and negative angles. Measuring angles in radians and in degrees and conversion from one measure to another. Definition of trigonometric functions with the help of unit circle. Truth of the identities for all x. Signs of trigonometric functions. Domain and range of trigonometric functions and their graphs. Expressing sin (x+y) and cos (x+y) in terms of sinx, siny, cosx & cosy and their simple applications. Identities related to sin2x, cos2x, tan2 x, sin3x, cos3x and tan3x.

Inverse Trigonometric Functions

Definition, range, domain, principal value branch. Graphs of inverse trigonometric functions

Complex Numbers and Quadratic Equations

Introduction, iota, conjugate, modulus, Inverse, Square root of a complex number, Algebraic properties of complex numbers, Representations of a complex numbers, Locus of a complex numbers.

Linear Inequalities

Linear inequalities: Algebraic solutions of linear inequalities in one variable and their representation on the number line.

Permutations and Combinations

Fundamental principle of counting. Factorial n. (n!) Permutations and combinations, derivation of Formulae for ${}^{n}P_{r}$ and ${}^{n}C_{r}$ and their connections, simple applications.

Binomial Theorem

Historical perspective, statement and proof of the binomial theorem for positive integral indices. Pascal's triangle, simple applications, General and middle term, constant term, term free from variable.

Sequence and Series

Sequence and Series. Arithmetic Progression (A. P.). Arithmetic Mean (A.M.) Geometric Progression (G.P.), general term of a G.P., sum of n terms of a G.P., infinite G.P. and its sum, geometric mean (G.M.), relation between A.M. and G.M.

Straight Lines

Slope of a line and angle between two lines. Various forms of equations of a line: parallel to axis, point-slope form, slope-intercept form etc. Distance of a point from a line.

Conic Sections

Sections of a cone: circles, ellipse, parabola, hyperbola, a point, a straight line and a pair of intersecting lines as a degenerated case of a conic section. Standard equations and simple properties of parabola, ellipse and hyperbola. Standard equation of a circle.

Three-dimensional Geometry

Coordinate axes and coordinate planes in three dimensions. Coordinates of a point. Distance between two points. Direction cosines and direction ratios of a line joining two points. Cartesian equation and vector equation of a line, skew lines, shortest distance between two lines. Angle between two lines.

Limits and Derivatives

Derivative introduced as rate of change both as that of distance function and geometrically. Intuitive idea of limit. Limits of polynomials and rational functions trigonometric, exponential and logarithmic functions. Definition of derivative relate it to scope of tangent of the curve, derivative of sum, difference, product and quotient of functions. Derivatives of polynomial and trigonometric functions.

Statistics

Measures of Dispersion: Range, Mean deviation, variance and standard deviation of ungrouped/grouped data.

Probability

Random experiments; outcomes, sample spaces (set representation). Events; occurrence of events, 'not', 'and' and 'or' events, exhaustive events, mutually exclusive events, Axiomatic (set theoretic) probability, connections with other theories of earlier classes. Probability of an event, probability of 'not', 'and' and 'or' events. Conditional probability, multiplication theorem on probability, independent events, total probability, Bayes' theorem, Random variable and its probability distribution, mean of random variable.

Matrices

Concept, notation, order, equality, types of matrices, zero and identity matrix, transpose of a matrix, symmetric and skew symmetric matrices. Operation on matrices: Addition and multiplication and multiplication with a scalar. Simple properties of addition, multiplication and scalar multiplication. On commutativity of multiplication of matrices and existence of non-zero matrices whose product is the zero matrix (restrict to square matrices of order 2). Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries).

Determinants

Determinant of a square matrix (up to 3 x 3 matrices), minors, co-factors and applications of determinants in finding the area of a triangle. Adjoint and inverse of a square matrix. Consistency, inconsistency and number of solutions of system of linear equations by examples, solving system of linear equations in two or three variables (having unique solution) using inverse of a matrix.

Continuity and Differentiability

Continuity and differentiability, derivative of composite functions, chain rule, derivative of inverse trigonometric functions, derivative of implicit functions.

Concept of exponential and logarithmic functions. Derivatives of logarithmic and exponential functions. Logarithmic differentiation, derivative of functions expressed in parametric forms. Second order derivatives.

Applications of Derivatives

Applications of derivatives: rate of change of quantities, increasing/decreasing functions, maxima and minima (first derivative test motivated geometrically and second derivative test given as a provable tool). Simple problems (that illustrate basic principles and understanding of the subject as well as real-life situations).

Integrals

Integration as inverse process of differentiation. Integration of a variety of functions by substitution, by partial fractions and by parts, Evaluation of simple integrals of the following types and problems based on them..

$$\int \frac{dx}{x^2 \pm a^2} \quad , \int \frac{dx}{\sqrt{x^2 \pm a^2}}, \quad \int \frac{dx}{\sqrt{a^2 - x^2}} \quad , \quad \int \frac{dx}{\sqrt{ax^2+bx+c}} \quad ,$$

$$\int \frac{dx}{\sqrt{ax^2+bx+c}},$$

$$\int \frac{px+q}{ax^2+bx+c}\,dx, \qquad \int \frac{px+q}{\sqrt{ax^2+bx+c}}\,dx, \qquad \int \sqrt{a^2 \pm x^2}\,dx,$$

$$\int \sqrt{x^2 - a^2}\,dx, \quad \int \sqrt{ax^2 + bx + c}\,dx,$$

Fundamental Theorem of Calculus. Basic Properties of definite integrals and evaluation of definite integrals.

Applications of the Integrals

Applications in finding the area under simple curves, especially lines, circles/ parabolas/ellipses (in standard form only).

Differential Equations

Definition, order and degree, general and particular solutions of a differential equation. Solution of differential equations by method of separation of variables, solutions of homogeneous differential equations of first order and first degree. Solutions of linear differential equation of the type: dy/dx + py=q, where p and q are functions of x or constants. dx/dy + px=q, where p is where p and q are functions of y or constant.

Vectors

Vectors and scalars, magnitude and direction of a vector. Direction cosines and direction ratios of a vector. Types of vectors (equal, unit, zero, parallel and collinear vectors), position vector of a point, negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scalar, position vector of a point dividing a line segment in a given ratio. Definition, Geometrical Interpretation, properties and application of scalar (dot) product of vectors, vector (cross) product of vectors.

Linear Programming

Introduction, related terminology such as constraints, objective function, optimization, graphical method of solution for problems in two variables, feasible and infeasible regions (bounded or unbounded), feasible and infeasible solutions, optimal feasible solutions (up to three non-trivial constraints).

Part B:

Educational Psychology and Pedagogy: (Marks-15)

Educational Psychology

Study methods in educational psychology, human development, physical development, mental development, emotional development, social development, moral development, adolescent development and problems, guidance and counseling, learning, factors affecting learning, theories of learning, intelligence, creativity, children with special needs, individual differences, personality, personality theories, adjustment, motivation

Assessment and Evaluation in Education

1. Assessment and Evaluation: Meaning, definition, types of assessment techniques, basis of assessment, Demerits of the current assessment system, differences between assessment, evaluation, examination/testing, continuous and comprehensive evaluation.

2. Assessment of Subject-Based Learning: Assessment tools and strategies, assignments and types, construction and classification of achievement tests, planning, construction, and its steps.

3. Teachers' ability to create appropriate instruments: Designing assessment instruments, using class- and subject-specific instruments, characteristics and types of imagination, objectives and types of appropriate assessment criteria, setting and using standards, types of feedback, creating and storing learner profiles, portfolios, rubrics, maintaining student profiles.

4. Testing: Types of tests, classification, essential qualities of a good test, administration, achievement tests in different subjects.

Pedagogy

1. Nature and scope of subjects: Concepts, history, subject aesthetics, and scope. Logical validity of conclusions

2. Student inquiry: Assessing student readiness, relating learning to real life, opportunities for independent problem solving, group learning strategies, and promoting classroom dialogue.

3. Aims and Achievable Objectives: Aims, objectives, and achievable objectives of education in the National Curriculum Framework 2005 and 2023, broad subject-specific objectives in school education.

4. Subject curriculum: Principles of curriculum design, curriculum at different school levels. State curriculum Framework

5. Lesson planning and methods for teaching and learning concepts: Various teaching methods and lesson plans, various learning resources (textbooks, audio-visual, multimedia, etc.).

Pedagogical Attitudes

1. Knowledge and learning: Meaning, nature, significance, various areas of knowledge, cultural knowledge, and values.

2. Teaching as a profession: Positive attitude, interest, and aptitude.

3. Understanding the teaching-learning process: Discipline, receptivity, teaching skills. Criteria for an effective teaching process, effective communication.

4. Constructivist teaching-learning process: Knowledge construction process, characteristics of a constructivist classroom, constructivist teachers.

5. Teacher professional development: Pre-service and in-service training programs, professional learning community, leadership qualities and group dynamics.

6. Gender perspective on education: Biological, social, and psychological determinants of gender, social psychology of gender roles, educational policies and gender concerns, gender issues in education.

Part C

General Studies & General Hindi/English **(25 Marks)**

सामान्य हिंदी **(अंक - 5)**

01. स्वर, व्यंजन, वर्तनी
02. लिंग, वचन, काल
03. संज्ञा, सर्वनाम, विशेषण, क्रिया, क्रिया विशेषण, कारक
04. समास रचना एवं प्रकार
05. संधि- स्वर, व्यंजन एवं विसर्ग संधि
06. व्याकरणिक अशुद्धियाँ
07. शब्द रचना उपसर्ग एवं प्रत्यय
08. शब्द प्रकार, तत्सम तदभव, देशज, विदेशी
09. पर्यायवाची, विलोम शब्द, अनेकार्थी शब्द, अनेक शब्दों या वाक्यांश के लिए एक शब्द

General English **(5 Marks)**

1. Number, Gender, Articles
2. Noun, Pronoun, Adjectives, Verb, Adverb
3. Preposition and Conjunctions
4. Synonyms, Antonyms, Homonyms,
5. One word substitution
6. Spellings, Prefixes, Suffixes
7. Proverb and Idioms
8. Active/Passive Voice
9. Sentences (Declarative, Negative, Interrogative, Imperative, Exclamatory)

10. Punctuations

General Mental Ability (05 Marks)

Reasoning, seeing relationships, analogies, numerical ability, spatial relationships, etc.

To test these factors, it will include questions like: spotting odds, numerical series, letter series, seeing relationships between letters, numbers and pictures, symbolic language, hidden pictures, squares and numbers, mathematical operations, matching pictures, various types of cube patterns, etc.

Computer Education (05 Marks)

- **Introduction to Computers:** What is a computer? Uses of computers in daily life (education, banking, healthcare, office work, communication, etc.), Importance and limitations of computers, General characteristics of computers.
- **Major Components of a Computer:** Introduction to hardware and software, CPU (Central Processing Unit), ALU, CU, Memory, Input devices (keyboard, mouse, scanner, touchpad, etc.), Output devices (monitor, printer, speakers, etc.).
- **Types of Printers**: Inkjet printers, LaserJet printers, Dot Matrix printers, Thermal and other modern printers.
- **Operating Systems:** Role of an operating system, MS-DOS, Commercial operating systems (Windows, MacOS, etc.), Open-source operating systems (Linux, Ubuntu, etc.).
- **Microsoft Office for Office Use:** MS Word – Creating, editing, and formatting documents.MS Excel – Tables, formulas, and charts.MS PowerPoint – Slide creation, design, and presentations.

- **Use of the Internet:** Introduction to the Internet, Inbox, Outbox, CC, BCC, Creating and sending emails, Searching online documents, Website browsing, General knowledge of various government department websites.
- **Antivirus and Computer Security:** What is a computer virus? Types of viruses, Damages caused by viruses, Importance of antivirus software, Safety and security measures.
- **Use of Multimedia:** Meaning of multimedia, Use of audio, video, and text, Applications of multimedia.
- **Storage Devices:** Primary and secondary storage, Hard disk, pen drive, CD/DVD, Introduction to cloud storage.
- **Search Engines and Online Platforms:** Google, YouTube, What is a search engine? How to search for required information? Safe and effective searching techniques.

General Knowledge (05 Marks)

50. Major Constitutional Provisions, Fundamental duties and rights under the Indian Constitution, Indian political system and constitutional rights, Right to Information (RTI), Cultural and national personalities, Democracy and elections, Lok Sabha and Rajya Sabha.
51. Indian History and National Movement, Indian civilization and culture, Historical events ,History of Indian independence from 1857 to 1947, Events that occurred after 1947.
52. Geography: Basic geography, Geography of India and the World.
53. Indian Economy: Social and economic development, Population perspective, Gross National Product (GNP) and per capita income, Five-Year Plans, Agriculture and rural development, Industrial development, Indian economy and banking system, Current economic events
54. General Science: Basic concepts related to physics, chemistry, biology, and botany
55. General Knowledge of Chhattisgarh: History of Chhattisgarh, Geography of Chhattisgarh, Political system, Economy, Government schemes, Awards and honors, Traditions, folk songs and music, important personalities, other important topics related to Chhattisgarh.
56. National Education Policy Part 1 School Education (NEP) 2020.

Lecturer Biology

Total Mark - 100

Content	Marks
PART-A Diversity in the Living World. Structural Organisation in Plants and animals	10
Cell: Structure and Function, Plant Physiology	15
Animal Physiology Reproduction	15
Genetics and Evolution, Biology in Human Welfare	10
Biotechnology Ecosystem	10
PART-B Educational Psychology, Assessment and Evaluation in Education, Pedagogy, Educational Aptitude	15
PART-C Language Proficiency and General Studies	25
Total	100

Diversity in the Living World.

1. **The Living World-** Biodiversity, Need for classification; three domains of life; taxonomy and systematics, concept of species and taxonomical hierarchy; binomial nomenclature
2. **Biological Classification**- Five kingdom classification: Salient features and classification of Monera, Protista and Fungi into major groups; Lichens, Viruses and Viroids.
3. **Plant Kingdom-**Classification of plants into major groups; Salient and distinguishing features and a few examples of Algae. Bryophyta, Pteridophyta, Gymnospermae Angiosperms. Plant Life Cycle and Alternation of Generations
4. **Animal Kingdom-** Salient features and classification of animals, non-chordates up to phyla level and chordates up to class level (salient features and at a few examples of each category).

Structural Organisation in Plants and animals

5. **Morphology of Flowering Plants-** Morphology of different parts of flowering plants: root, stem, leaf, inflorescence, flower, fruit and seed. Description of families: Solanaceae
6. **Anatomy of Flowering Plants-** Anatomy and functions of tissue systems in dicots and monocots.
7. **Structural Organisation in Animals-** Morphology. Anatomy and functions of different systems (digestive, circulatory, respiratory, nervous and reproductive) of frog.

Cell: Structure and Function

8. **Cell-The Unit of Life-** Cell theory and cell as the basic unit of life, structure of prokaryotic and eukaryotic cells; Plant cell and animal cell; cell envelope; cell membrane, cell wall; cell organelles structure and function; endomembrane system- endoplasmic reticulum, ribosomes, golgi bodies, lysosomes, vacuoles, mitochondria, plastids, microbodies, cytoskeleton, cilia, flagella, centrioles (ultrastructure and function); nucleus.

9. **Biomolecules-** Chemical constituents of living cells: biomolecules, structure and function of proteins, carbohydrates, lipids, nucleic acids; Enzymes properties, enzyme action.
10. **Cell Cycle and Cell Division**- Cell cycle, mitosis, meiosis and their significance

Plant Physiology

11. **Photosynthesis in Higher Plants-** Photosynthesis as a means of autotrophic nutrition; site of photosynthesis, pigments involved in photosynthesis (elementary idea); photochemical and biosynthetic phases of photosynthesis; cyclic and non-cyclic photophosphorylation; chemiosmotic hypothesis; photorespiration; C3 and C4 pathways; factors affecting photosynthesis.
12. **Respiration in Plants-** Exchange of gases; cellular respiration - glycosis, fermentation (anaerobic), TCA cycle and electron transport system (aerobic); energy relations number of ATP molecules generated; amphibolic pathways; respiratory quotient.
13. **Plant-Growth and Development-** Seed germination; phases of plant growth and plant growth rate; conditions for growth; differentiation, dedifferentiation and redifferentiation; sequence of developmental processes m a plant cell; growth regulators - auxin, gibberellin, cytokinin, ethylene, ABA.

Animal Physiology

14. **Breathing and Exchange of Gases-** Introduction to respiratory organs in animals, Respiratory system in humans; mechanism of breathing and its regulation in humans exchange of gases, transport of gases and regulation of respiration, respiratory volumes: disorders related to respiration asthma, emphysema, occupational respiratory disorders.
15. **Body Fluids and Circulation-** Composition of blood, blood groups, coagulation of blood; composition of lymph and its function; human

circulatory system - Structure of human heart and blood vessels; cardiac cycle, cardiac output, ECG; double circulation, regulation of cardiac activity; disorders of circulatory system-hypertension, coronary artery disease, angina pectoris, heart failure.

16. **Excretory Products and their Elimination-** Modes of excretion-ammonotelism, ureotelism, uricotelism; human excretory system-structure and function, urine formation, osmoregulation; regulation of kidney function angiotensin, atriai natriuretic factor, ADH, diabetes insipidus, micturition; role of other organs in excretion; disorders - uremia, renal failure, renal calculi, nephritis, dialysis and artificial kidney, renin kidney transplant
17. **Locomotion and Movement-** Types of movement amoeboid, ciliary, flagellar, muscular, skeletal muscle, contractile proteins and muscle contraction, skeletal system and its functions; joints; disorders of muscular and skeletal systems-myasthenia gravis, tetany, muscular dystrophy, arthritis, osteoporosis, gout.
18. **Chemical Coordination and Integration-** Endocrine glands and hormones; human endocrine system hypothalamus, pituitary, pineal, thyroid, parathyroid, thymus, adrenal, pancreas, gonads, hormones of heart, kidney and gastrointestinal tract, mechanism of hormone action (elementary idea); role of hormones as messengers and regulators, hypo and hyperactivity and related disorders; dwarfism, acromegaly, cretinism, goiter, exophthalmic goiter, diabetes, Addison's disease.
19. **Neural Control and Coordination-** Neuron and nerves; Nervous system in humans central nervous system and peripheral nervous system; generation and conduction of nerve impulse; visceral nervous system.

Reproduction

20. **Sexual Reproduction in Flowering Plants -** Flower structure, development of male and female gametophytes; pollination types, agencies and examples; outbreeding devices, pollen-pistil interaction; double fertilization; post fertilization events development of endosperm and embryo, development of

seed and formation of fruit; special modes- apomixis, parthenocarpy, polyembryony: Significance of seed dispersal and fruit formation.

21. **Human Reproduction-** Male and female reproductive systems; microscopic anatomy of testis and ovary, gametogenesis -spermatogenesis and oogenesis, menstrual cycle; fertilisation, embryo development up to blastocyst formation, implantation, pregnancy and placenta formation, parturition, lactation
22. **Reproductive Health-** Need for reproductive health and prevention of Sexually Transmitted Diseases (STDs); birth control need and methods; medical termination of pregnancy (MTP); amniocentesis; infertility and assisted reproductive technologies IVF, ZIFT, GIFT

Genetics and Evolution

23. **Principles of Inheritance and Variation -** Heredity and variation, Mendelian inheritance; deviations from Mendelism incomplete dominance, co-dominance, multiple alleles and inheritance of blood groups, pleiotropy, elementary idea of polygenic inheritance; chromosome theory of inheritance; chromosomes and genes, linkage and crossing over: Sex determination in human being, birds and honey bee; sex linked inheritance-haemophilia.colour blindness; Mendelian disorders in humans-thalassemia: chromosomal disorders in humans: Down's syndrome. Turner's and Klinefelter's syndromes,
24. **Molecular Basis of Inheritance-** Structure of DNA and RNA, DNA packaging: Search for genetic material and DNA as genetic material: DNA replication; Central Dogma; transcription, genetic code, translation; gene expression and regulation - lac operon, Human genome project, DNA fingerprinting.
25. **Evolution -** Origin of life; biological evolution and evidences for biological evolution (paleontology. comparative anatomy, embryology and molecular evidences); adaptive radiation, Darwin's theory of evolution; mechanism of evolution variation (mutation and recombination) and natural selection with

examples, types of natural selection; Gene flow and genetic drift, Hardy-Weinberg's principle; human evolution

Biology in Human Welfare

26. **Human Health and Diseases -** Pathogens; parasites causing human diseases (malaria, dengue, chikungunya, filariasis, ascariasis, typhoid, pneumonia, common cold, amoebiasis, ring worm) and their control; Basic concepts of immunology-vaccines, cancer, HIV and AIDS; Adolescence-drug and alcohol abuse.
27. **Microbes in human-** Microbes in domestic products, microbes in industrial Products, microbes in antibiotic production, Microbes. as bio fertilizers, Contribution of microbes in substances cycling, microbes in biogas production, microbes in sewage treatment, microbes as biological Control agents

Biotechnology

28. **Biotechnology-**Principles and Processes- Genetic Engineering (Recombinant DNA Technology).
29. **Biotechnology and its Application -** Application of biotechnology in health and agriculture: genetically modified organisms - Bt crops, Human insulin, gene therapy, molecular diagnosis; transgenic animals, biosafety issues, biosafety and patents.

Ecosystem

30. **Organisms and Populations -** Population interactions mutualism, competition, predation, parasitism, commensalism, population attributes - growth, birth rate and death rate, age distribution.
31. **Ecosystem -** Ecosystem, productivity and decomposition; energy flow; pyramids of number, biomass, energy.
32. **Biodiversity and Conservation -** Biodiversity Concept, levels, patterns, importance, loss of biodiversity; biodiversity conservation; hotspots, endangered organisms, extinction, Red Data Book, Sacred Groves, Biosphere reserves, national parks, wildlife, sanctuaries and Ramsar sites.
33. **Environmental Issues** - Air Pollution, Water Pollution, solid waste, solid waste management, radio active fall outs, dirt or dirt bombs, noise pollution, soil Pollution, global Environmental change, acid rain.

Part B:

Educational Psychology and Pedagogy: (Marks-15)

Educational Psychology

Study methods in educational psychology, human development, physical development, mental development, emotional development, social development, moral development, adolescent development and problems, guidance and counseling, learning, factors affecting learning, theories of learning, intelligence, creativity, children with special needs, individual differences, personality, personality theories, adjustment, motivation

Assessment and Evaluation in Education

1. Assessment and Evaluation: Meaning, definition, types of assessment techniques, basis of assessment, Demerits of the current assessment system, differences between assessment, evaluation, examination/testing, continuous and comprehensive evaluation.

2. Assessment of Subject-Based Learning: Assessment tools and strategies, assignments and types, construction and classification of achievement tests, planning, construction, and its steps.

3. Teachers' ability to create appropriate instruments: Designing assessment instruments, using class- and subject-specific instruments, characteristics and types of imagination, objectives and types of appropriate assessment criteria, setting and using standards, types of feedback, creating and storing learner profiles, portfolios, rubrics, maintaining student profiles.

4. Testing: Types of tests, classification, essential qualities of a good test, administration, achievement tests in different subjects.

Pedagogy

1. Nature and scope of subjects: Concepts, history, subject aesthetics, and scope. Logical validity of conclusions

2. Student inquiry: Assessing student readiness, relating learning to real life, opportunities for independent problem solving, group learning strategies, and promoting classroom dialogue.

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4. Subject curriculum: Principles of curriculum design, curriculum at different school levels. State curriculum Framework

5. Lesson planning and methods for teaching and learning concepts: Various teaching methods and lesson plans, various learning resources (textbooks, audio-visual, multimedia, etc.).

Pedagogical Attitudes

1. Knowledge and learning: Meaning, nature, significance, various areas of knowledge, cultural knowledge, and values.

2. Teaching as a profession: Positive attitude, interest, and aptitude.

3. Understanding the teaching-learning process: Discipline, receptivity, teaching skills. Criteria for an effective teaching process, effective communication.

4. Constructivist teaching-learning process: Knowledge construction process, characteristics of a constructivist classroom, constructivist teachers.

5. Teacher professional development: Pre-service and in-service training programs, professional learning community, leadership qualities and group dynamics.

6. Gender perspective on education: Biological, social, and psychological determinants of gender, social psychology of gender roles, educational policies and gender concerns, gender issues in education.

Part C

General Studies & General Hindi/English **(25 Marks)**

सामान्य हिंदी **(अंक - 5)**

01. स्वर, व्यंजन, वर्तनी
02. लिंग, वचन, काल
03. संज्ञा, सर्वनाम, विशेषण, क्रिया, क्रिया विशेषण, कारक
04. समास रचना एवं प्रकार
05. संधि- स्वर, व्यंजन एवं विसर्ग संधि
06. व्याकरणिक अशुद्धियाँ
07. शब्द रचना उपसर्ग एवं प्रत्यय
08. शब्द प्रकार, तत्सम तदभव, देशज, विदेशी
09. पर्यायवाची, विलोम शब्द, अनेकार्थी शब्द, अनेक शब्दों या वाक्यांश के लिए एक शब्द

General English **(5 Marks)**

1. Number, Gender, Articles

2. Noun, Pronoun, Adjectives, Verb, Adverb

3. Preposition and Conjunctions

4. Synonyms, Antonyms, Homonyms,

5. One word substitution

6. Spellings, Prefixes, Suffixes

7. Proverb and Idioms

8. Active/Passive Voice

9. Sentences (Declarative, Negative, Interrogative, Imperative, Exclamatory)

10. Punctuations

General Mental Ability (05 Marks)

Reasoning, seeing relationships, analogies, numerical ability, spatial relationships, etc.

To test these factors, it will include questions like: spotting odds, numerical series, letter series, seeing relationships between letters, numbers and pictures, symbolic language, hidden pictures, squares and numbers, mathematical operations, matching pictures, various types of cube patterns, etc.

Computer Education (05 Marks)

- **Introduction to Computers:** What is a computer? Uses of computers in daily life (education, banking, healthcare, office work, communication, etc.), Importance and limitations of computers, General characteristics of computers.
- **Major Components of a Computer:** Introduction to hardware and software, CPU (Central Processing Unit), ALU, CU, Memory, Input devices (keyboard, mouse, scanner, touchpad, etc.), Output devices (monitor, printer, speakers, etc.).

- **Types of Printers**: Inkjet printers, LaserJet printers, Dot Matrix printers, Thermal and other modern printers.
- **Operating Systems:** Role of an operating system, MS-DOS, Commercial operating systems (Windows, MacOS, etc.), Open-source operating systems (Linux, Ubuntu, etc.).
- **Microsoft Office for Office Use:** MS Word – Creating, editing, and formatting documents.MS Excel – Tables, formulas, and charts.MS PowerPoint – Slide creation, design, and presentations.
- **Use of the Internet:** Introduction to the Internet, Inbox, Outbox, CC, BCC, Creating and sending emails, Searching online documents, Website browsing, General knowledge of various government department websites.
- **Antivirus and Computer Security:** What is a computer virus? Types of viruses, Damages caused by viruses, Importance of antivirus software, Safety and security measures.
- **Use of Multimedia:** Meaning of multimedia, Use of audio, video, and text, Applications of multimedia.
- **Storage Devices:** Primary and secondary storage, Hard disk, pen drive, CD/DVD, Introduction to cloud storage.
- **Search Engines and Online Platforms:** Google, YouTube, What is a search engine? How to search for required information? Safe and effective searching techniques.

General Knowledge (05 Marks)

57. Major Constitutional Provisions, Fundamental duties and rights under the Indian Constitution, Indian political system and constitutional rights, Right to Information (RTI), Cultural and national personalities, Democracy and elections, Lok Sabha and Rajya Sabha.
58. Indian History and National Movement, Indian civilization and culture, Historical events ,History of Indian independence from 1857 to 1947, Events that occurred after 1947.
59. Geography: Basic geography, Geography of India and the World.
60. Indian Economy: Social and economic development, Population perspective, Gross National Product (GNP) and per capita income, Five-Year Plans, Agriculture and rural development, Industrial development, Indian economy and banking system, Current economic events

61. General Science: Basic concepts related to physics, chemistry, biology, and botany
62. General Knowledge of Chhattisgarh: History of Chhattisgarh, Geography of Chhattisgarh, Political system, Economy, Government schemes, Awards and honors, Traditions, folk songs and music, important personalities, other important topics related to Chhattisgarh.
63. National Education Policy Part 1 School Education (NEP) 2020.

Subject – Commerce

Post Name – Lecturer

Total Mark 100

Number	Subject matter	score
1	**PART-A** Accountancy	20
2	Business studies	20
3	Economics	20
4	**PART-B** Educational Psychology, Assessment and Evaluation in Education, Pedagogy, Educational Aptitude	15
5	**PART-C** General Studies	25
Total		**100**

ACCOUNTING

1. Introduction to Accounting: Meaning, characteristics, objectives, advantages and limitations, types of accounting information, users of accounting information and their needs, factors determining the quality of accounting information.

2. Basic Accounting Terms Business Transactions, Account, Capital, Drawings, Liabilities, Assets (Fixed and Current Assets, Tangible and Intangible Assets), Receipts (Capital and Incoming), Expenses (Capital, Incoming and Deferred), Expenses, Income, Profits, Losses, Purchases, Purchase Returns, Sales, Sales Returns, Goods, Stock, Debtors, Creditors, Bills of Lading, Bills Receivable, Cost, Vouchers, Deductions, Trade and Cash, Other Important Accounting Terms- Owner, Books of Accounts, Recurring Unit, Entry, Debit and Credit, Living Stock, Stores, Bad Debts, Solvency, Bankruptcy, Commission.

3. Theoretical Basis of Accounting and Accounting Standards Theoretical Basis of Accounting, Basic Assumptions of Accounting - Going Business Assumption, Consistency Assumption, Accrual Assumption, Accounting Principles - Accounting Unit Principle, Monetary Measurement Principle, Accounting Period Principle, Principle of Full Disclosure,

Principle of Materiality, Principle of Foresight, Cost Concept, Matching Concept, Bilateral Concept, Accounting Standards and IFRS (International Financial Reporting Standards) Concepts and Objectives.

4. Double Accounting System – Meaning, characteristics, principles, merits and demerits of double accounting system, accounting steps.

5. Basis of Accounting Cash Basis, Accrual Basis Basis of Accounting Cash Basis, Accrual Basis.

6. Accounting equation and rules of debit and credit Accounting equation Analysis of transactions on the basis of accounting equation, effect of transactions or deals on accounting equation (decrease or increase), effect on assets, liabilities, capital, revenue and expenses, rules of debit and credit Rules related to assets, liabilities, capital, revenue and expenses.

7. Origin of Transactions - Source Documents and Evidences Origin of Transactions Source Documents Supporting Evidences Books Cash Memorandum, Deposit Form, Cheque, Debit

Note, Credit Note, Creation of Accounting Evidences Cash (Debit & Credit) and Non-Cash (Transfer).

8. Book of initial accounts, journal: To record business transactions, book of initial accounts, journal (roznamacha).

9. Books of opening entry Cash, Cash Book, Ordinary Cash Book, Cash Book with Discount column and Bank and Cash column and Cash Book with Bank Discount column, Petty Cash Book.

10. Books of initial entry and special purpose subsidiary books.

Other books- Purchase Book, Sales Book, Purchase Return Book, Sales Return Book and Main Journal.

11. Bank Reconciliation Statement- Meaning, need, reasons for difference, preparation of Bank Reconciliation Statement, Revised Cash Book Balance.

12. Ledgers Ledgers - Format, Posting from Journal, Posting from Cash Book and other Special Purpose Subsidiary Books, Extraction of Accounts.

13. Trial Balance Meaning, Objectives and Preparation of Trial Balance, Scope, Preparation of Trial Balance by Balance Method only.

14. Depreciation- Depreciation- concept, need and factors affecting it, methods of charging depreciation- straight line method and reducing or written down value method (except change

in method), showing depreciation by preparing Asset Account, Depreciation Plan Account and Asset Sales Account.

15. Planning and Reserves Planning and Reserves concept, objectives, difference between planning and reserve, types of reserves – open reserve, hidden reserve, profit reserve, capital reserve, general reserve and special reserve.

16. Bill of Exchange, Bill of Exchange and Promissory Note - Meaning, Features, Parties, Form, Difference, Important Terms - Subject Matter, Conditions, Due Date, Grace Day, Maturity Date, Discounting of Bill, Negotiating Bill, Sending for Collection, Dishonour of Bill, Drawing of Bill, Pre-procurement and Renewal of Bill, Accounting of Miscellaneous Bill Transactions

17. Rectification of errors- Errors, types of errors, errors, accounting, theoretical and compensating errors and their effect on trial balance, detection and rectification of errors, preparation of suspense account.

18. Financial Statements (Unadjusted) Financial Statements – Objectives and Importance, Trading and Profit and Loss Account – Gross Profit, Operating Profit and Net Profit, Balance Sheet (Balance Sheet) – Need, Grouping and Arranging of Assets and Liabilities.

19. Financial Statements II - Final Accounts Adjustments for preparation of financial statements including adjustments - closing stock, outstanding expenses, prepaid expenses, accrued income, income received in advance, depreciation, bad debts, provision for doubtful debts, provision for discount on debtors, abnormal loss, withdrawal of goods for personal use, distribution of goods as free samples, manager's commission, preparation of trading and profit and loss account and balance sheet of sole proprietorship.

20. Accounting from incomplete records or single entry system Incomplete accounting system – meaning, uses and limitations Determination of profit and loss by statement of affairs method.

21. Financial Statements of Non-Profit Organisations Non-profit organisation concept, Receipts and Payments Account – features and construction, Income and Expenditure Account – features, preparation of Income and Expenditure Account and Balance Sheet from the given Receipts and Payments Account and additional information.

22. Introduction to Computers and Accounting Information System (AIS), Introduction to Computers (Basics, capabilities, limitations of computers), Operational Software, Application Software, Accounting Information System (AIS) as part of MIS, Meaning of mechanized operation of accounting process or automation of accounting process, Steps of Automation (2)

Difference between manual or manual accounting and computerized accounting, Accounting process in computerized environment, Selection of Accounting Software, Types of Software – Pre-built Software, Functional or Systematic Software, Customized Software, Creation of Accounting Group, Designing of Reports.

23. Accounting and Database System – Explain database system and related concepts from the perspective of accounting.

24. Basic principles of partnership firms - Meaning of partnership, Characteristics of partnership, Limited Liability Partnership, Rights of Partnership, Partnership Deed, Difference between Articles of a Sole Proprietor and Partnership Firm, Should a partner possess certain qualifications to become a partner, Importance of Partnership Deed, Objectives or need of preparing Partnership Deed, Important facts of Partnership Deed, Accounting in the absence of Partnership Deed, Rules affecting practice, Special aspects of Partnership Account, Some other important provisions of Partnership Act, Division of profit among partners, Profit and Loss Appropriation Account, Journal entries relating to Profit and Loss Appropriation Account, Characteristics of Profit and Loss Appropriation Account, Difference between Profit and Loss Appropriation Account and Profit and Loss Appropriation Account, Capital Account, (a) Fixed Capital Account, Partners' Capital Account, Partners' Capital Account, Partners' Current Account, Partners' Current Account, (b) Variable Capital Account, Difference between Fixed and Variable Capital Account, Difference between Capital Account and Current Account, Division of profit and loss, Adjustment of closed accounts among partners, Reconciliation of Profit and Loss Guarantee, calculation of initial capital, calculation of interest on drawings, in respect of interest on drawings.

25. Reconstitution of Partnership Firm Meaning of reconstitution of partnership firm, characteristics of reconstitution of partnership firm, methods of reconstitution of partnership firm, conditions and necessity, change in profit sharing ratio, sacrificing ratio, profit ratio, difference between sacrificing ratio and profit ratio, change in profit sharing ratio, method of ascertaining new ratio of partners, goodwill, definition of goodwill, characteristics of goodwill, whether goodwill is an intangible asset, reasons for creation of goodwill/factors affecting goodwill, importance of goodwill, types of goodwill, nature of goodwill, should the amount of goodwill be written off?, need for valuation of goodwill.

Under what conditions is valuation necessary?, Methods of valuation of goodwill, Average profit method, (A) Requirement of interest from the purchase number of years or the original

number of years, (B) Points to be taken into account while computing average profit, Based on adjusted profit or future profit or actual profit, Weighted average profit method, Meaning

of bonus, (B) Average capital employed, (C) Average profit and actual average profit, Advantages of bonus method, Disadvantages of bonus method, (3) Capitalisation method, (4) Annuity method, Comparative study of different methods of goodwill, Critical study of different methods of goodwill, Difference between normal profit and bonus, (A) Difference between average profit and bonus, (B) Concepts of goodwill, New guidelines on accounting

of goodwill by the Institute of Chartered Accountants of India, Methods of accounting of goodwill, Difference between normal profit and bonus, Payment of premium in kind, Revaluation method, Opening of loan account from amount of goodwill, secret goodwill, journal entries relating to accounting of goodwill as per guidelines issued under paragraph 16 of Accounting Standard 10 at a glance, meaning of admission of a new partner, reasons for admission of a new partner in the firm, persons and institutions who can become new partners, legal status of new partner, (A) Rights of new partner, (B) Major problems on admission of a new partner, computation of capital brought in by the new partner and related accounts, revaluation of assets and liabilities, journal entries for revaluation, need/purpose of revaluation of assets and liabilities at the time of admission of a new partner, accounting of revaluation of assets and liabilities, some points to remember (A) Capital, (B) Amount of capital, new partner's share in profit, new profit sharing ratio, treatment of goodwill as per Accounting Standard 10, Accounting Standard 10. Various cases and accounts of goodwill at the time of admission of a new partner, in the books of the firm Accounting of goodwill, (1) Surplus method, (II) Revaluation method, (III) Other methods, (IV) Adjusting revaluation of assets and liabilities of the farm.

26. Retirement and death of a partner - Retirement of a partner, removal or termination of a partner, legal status of retiring partner, accounts relating to retirement, profit taking ratio or bonus ratio, difference between sacrificing ratio and profit taking ratio, goodwill account, revaluation of assets and liabilities, accounts relating to accumulated and undistributed profits, payment of amount due to retiring partner, adjustment of capital, death of partner, meaning of legal representative or legal heir, computation of share of profit of deceased partner (up to the

date of death), joint life insurance policy, (a) meaning of individual or single life insurance policy, (b) meaning of surrender value, methods of payment to deceased partner, payment by annuity, memorial revaluation account, difference between revaluation account and contractual revaluation account, difference between retirement and death from accounting point of view, difference between retirement and death of a partner.

27. Dissolution of a partner Meaning of dissolution/dissolution, types of dissolution, meaning of partnership, meaning of dissolution of partnership, dissolution or winding up of partnership firm, meaning of dissolution of partnership

and difference between dissolution of a firm, necessary conditions or reasons or necessity for dissolution of a partnership. (A) Difference between firm's debts and personal debts, necessary conditions or reasons or necessity for dissolution of a partnership firm,

methods/methods of dissolution of a partnership firm, settlement of accounts on dissolution, effects of dissolution of a firm, dissolution proceedings, payment of personal debts of partners, settlement of accounts on dissolution of a firm: Section 48, accounting procedure on dissolution of a firm, realisation account, realisation of assets, payment of liabilities, payment of realisation expenses, payment of commission, undisclosed assets and liabilities, closure of realisation account, format of realisation account, partners' capital accounts, partners' loan accounts, bank or cash account, goodwill account, preparation of current accounts of partners, (A) Revaluation account and realisation, difference in account, goodwill, unwritten liabilities and assets, reserve account.

28. Company Accounts - Preliminary Accounting of Share Capital, Definitions of Company, Characteristics of Company, Partnership and

Differences in Joint Stock Company, Types of Company, Formation of Company, Difference between One Person, Private and Public Company, Main Documents of Company, Characteristics, Articles of Association, Features, Prospectus, Objects of Prospectus, Stage or Stage or Process of Commencement of Business of a Company, Substitute Prospectus, Accounts relating to Company, Statutory Books of Company, Share, Nature of Share, Types of Shares, (1) Ordinary Share or Equity Share, Main Advantages of Equity Shares, Disadvantages

of Equity Shares, (11) Preference Share, Share Certificate, Share Warrant, Difference between Share Certificate and Share Warrant, Types of Preference Shares, Characteristics of Preference Shares, Advantages of Preference Shares, Disadvantages or Disadvantages of Preference Shares, Difference between Ordinary Share and Preference Share, Meaning of Stock, Difference between Stock and Share, Share Capital, Types of Capital of Company, Share Capital, Difference between Authorised Capital and Issued Capital, Difference between Authorised Capital and Paid-up Capital, Capital Reserve and Consolidated Capital Difference, Format of Company's Balance Sheet, Terms and conditions of issue of shares, Method of issue of shares, Preliminary Expenses, Employee Stock Option Scheme, Private Arrangement of Shares, Sweat Equity Shares, Bonus Shares or Free Shares, Dividend, Books of Accounts to be maintained by the Company, Need for (Purpose) of issue of shares, (B) When amount is received in installments, Undersubscription and Oversubscription, Oversubscription, Issue of shares at interest or premium, (A) Unpaid/Outstanding or Residual Calls (1) (A) Call in Advance, (B) Difference between payment of outstanding and call in advance, Issue of shares for consideration other than cash,

Issue of promoters' shares, Meaning of forfeiture of shares, Process of forfeiture of shares, Effects of forfeiture of shares, Discount on forfeiture, Method of accounting for forfeiture of shares, Discount of forfeited shares Reissue, (A), Why is reissue of forfeited shares not called allotment?, Entries to be made on reissue of forfeited shares, Employee Stock Option Plan, Rights Issue, Buyback of shares.

29. Issue and Redemption of Debentures Meaning and Definition of Debenture, Meaning of Bond, Difference between Bond and Debenture, Characteristics of Debenture, Nature of Debenture, Difference between Shareholder and Debenture Holder, A Difference between Debenture and Debenture Fund, B Objectives of Debenture Issue, Types of Debentures, Difference between Debenture and Share, Benefits of Company by Issue of Debentures, (A) When and why are Debentures issued?, Charges, Debenture Trust Agreement, Company people Issue of Debentures Act 2013 and Debentures, Types of Issue of Debentures, Journal Entries for Issue of Debentures, Issue of Debentures for Cash, Issue of Debentures for Consideration, Issue of Debentures for Cash, Issue of Debentures at Par, Issue of Debentures at Premium, Issue of Debentures at Discount, (A) Appearance in Balance Sheet, Oversubscription of Debentures,

Payment of Call in Advance, Call in Balance Outstanding, Issue of Debentures for Consideration other than Cash, When a Business is Purchased, Issue of Debentures as Collateral Security, Deduction of Income Tax on Interest on Debentures, Redemption of Debentures, Sources of redemption (finance) of debentures, methods of redemption of debentures, redemption of debentures by lump sum payment method, (A) SEBI Guidelines, (B) Display of Debenture Redemption Reserve Account, Redemption or Redemption of debentures, Source of funds required for redemption of debentures, Terms of issue of debentures, Redemption by issue of shares and new debentures, Accounting and redemption of issue of debentures, Redemption of bonds with call and refund option, Redemption of debentures by annual installment (withdrawal), Redemption of debentures by purchasing own debentures from the open market, Purchase of debentures for immediate cancellation, Interest transaction on own debentures, Purchase of debentures without interest and with interest, redemption by conversion, statutory rules for redemption by conversion, payment after a specified period, steps used in the working of sinking fund method, accounting transactions of sinking fund or debenture redemption method, sinking fund Table.

30. Financial Statements of a Company Meaning of Financial Statements, Balance Sheet or Balance Sheet or Balance Sheet, Characteristics of Balance Sheet, Profit and Loss Statement or Income Statement, Notes to Accounts, Cash Flow Statement, Nature of Financial

Statements, Board Report/Director's Report, Auditor's Report, Financial Statements, Objectives of Financial Statements, Types of Financial Statements, Form and Format of

Income Statement, Financial Statements of a Company or Final Accounts, Schedule III of the Companies Act, 2013, Interpretation of Equity and Liabilities, Interpretation of Assets, Format and Preparation of Profit and Loss Statement, General Instructions for Preparation of Profit and Loss Statement, Users of Financial Statements, Limitations of Financial Statements, Characteristics of a Model Financial Statement.

31. Analysis and Interpretation of Financial Statements Meaning of analysis of financial statements, objectives of analysis of financial statements, need of analysis of financial

statements, interpretation of financial statements, methodology of analysis and interpretation, types of analysis of financial statements, (A) Difference between horizontal analysis and vertical analysis, (B) Standards of financial statement analysis, methods or tools or techniques of analysis of financial statements, comparative financial statements or analysis, types of comparative statements, advantages of comparative balance sheet, importance of financial analysis, tools of financial analysis, common size balance sheet, trend analysis, precautions in trend analysis, average analysis, limitations of financial statement analysis.

32. Accounting Ratios - Meaning of Ratio, Meaning of Accounting Ratio, Meaning of Ratio Analysis, Advantages of Ratio Analysis, (a) Types of Ratios, Limitations of Ratio Analysis, Classification of Ratios, Liquidity Ratios, Difference between Current Ratio and Liquid Ratio, Absolute Liquidity Ratio, Solvency Ratio, Debt-Equity Ratio, Proprietary Ratio, Solvency Ratio, Fixed Assets Ratio, Solvency Ratio, Capital Incentivization Ratio, Interest Coverage Ratio or Debt Service Ratio, Debt to Total Funds Ratio, Turnover or Activity Ratios, Inventory Turnover Ratio, Debtors Turnover Ratio or Trade Receivables Turnover Ratio, Average Collection Period, Creditors Turnover Ratio or Trade Payables Ratio, Working Capital Turnover Ratio, Turnover of Assets Ratio, Profitability Ratio, Normal Profitability Ratio, Objectives and Importance of Gross Profit Ratio, Net Profit Ratio, Operating Ratio, Expense Ratio, Overall Profitability Ratio, Return on Equity Capital, (b) Equity Share Capital Return on capital employed, based on

33. Cash Flow Statement (Based on Accounting Standard-3) Meaning of Cash Flow Statement, Objectives or Uses of Cash Flow Statement, Advantages or Importance of Cash Flow Statement, Limitations of Cash Flow Statement, Difference between Cash Flow Statement and Fund Flow Statement, Difference between Cash Flow Statement and Cash Budget, Cash Flow Statement and Accounting Standard-3, Some other clarifications in Cash

Flow Statement, Operating Activities, Importance of showing cash flow from each activity separately, When does cash flow occur?, Preparation of Cash Flow, Preparation of Cash Flow

Statement without adjustment, Classification of Cash Flows, Indirect Method, Computation of Cash Flow from various Activities, Interim Dividend, Transfer to Reserve, Provision for Expenditure, Provision for Tax, How is Income Tax Paid Computation?, Adjustment of

Changes in Current Assets and Liabilities Relating to Operating Activities, Cash Flow from Investing Activities.

BUSINESS STUDIES

1. Commerce in India or History of Commerce, Major Trade Centres of India, Major Trade and Industrial Centres of India, Import and Export, Place of Indian Peninsula in the World Economy.

2 Business: Nature and Objectives Preliminary, Human Activities, Basis of categorizing activities into economic and non-economic, Classification of Human Activities, Difference between Economic and Non-Economic Activities, Business, Profession, Employment or Service, Difference between Business, Profession and Employment or Employment, Similarities between Business and Profession, Objectives or Importance of Business, Classification of Business Activities, Commerce, Components of Commerce, Auxiliary Activities of Business, Difference between Industry, Commerce and Business, Business Risks: Nature and Causes, Nature or Characteristics of Business Risks, Effect of Market Conditions on Risk, Causes of Business Risk, Contribution or Role of Profit in Business, (a) Earning maximum profit is the objective (goal) of business, (b) Principle of Service First and then Profit, (c) Earning Profit through Service.

3. Meaning of Sole Proprietorship or Sole Trade Form of Business Organisation, Origin of Sole Trade or Business, Meaning of Sole Proprietorship, Characteristics, Legal Status of Sole

Proprietorship or Sole Trade, Merits, Advantages or Importance of Sole Trade, Demerits or Disadvantages, Is Sole Trade a Relic of the Age of Barbarism?

4. Partnership - Organisation of Partnership: Meaning, characteristics, types, types of partners, advantages, merits and importance of partnership, demerits, difference between partnership and sole proprietorship, difference between partnership and joint Hindu family business, formation or formation of partnership firm, registration of partnership firm.

5. Joint Hindu Family Business - Meaning of Joint Hindu Family, Sects of Hindu Law, Merits or Advantages, Demerits or Disadvantages of Joint Hindu Family Business.

6. Co-operative Societies - Meaning, characteristics, objectives of co-operative organisation, merits, benefits or importance of co-operative organisation, demerits or defects of co-operative organisation, reasons for slackness of co-operative organisations in India, suggestions for redressal of defects, difference between co-operative society and joint stock company, method of establishing co-operative society/registration, difference between co-operative society and partnership, types of co-operative societies.

7. Company / Joint Stock Company Company organization, meaning, characteristics, merits or advantages and demerits, difference between joint stock company and partnership, types of companies, advantages, demerits and privileges of private company, public company, one person company.

8. Formation of Company Various stages of establishment of company, A. Incorporation, B. Merger or registration, commencement of business, main documents used in establishment of company, II. Meaning and definition of councilor by-laws, differences between councilor boundary by-laws and council by-laws, III. Description, replaced description.

Selection of business organisation format and starting a business. Selection of business organisation format, difference between different business organisation formats, decision on ownership of the organisation, suitability of different organisation formats, important points or problems to be kept in mind while starting a business.

10. Private Sector and Public Sector - Meaning, characteristics, merits or advantages, disadvantages of private sector/private enterprise, types of private enterprises, public sector, characteristics of public enterprises, business objectives of public sector, advantages and disadvantages of public enterprises, future of public sector in India, difference between private sector and public sector or private and public enterprises, comparative study of various public enterprises, changing role of public sector, board managed public enterprises, mixed sector.

11. Global Enterprises (Multinational Companies) Joint Ventures – Multinational Companies, Characteristics, Advantages or Role, Disadvantages, Some examples of Indian and Foreign Multinational Companies, Global Enterprises in India and the products produced by them,

Philosophy of Multinational Companies, Joint Venture or Joint Venture, Public Private Partnership.

12. Business Services: Meaning of banking business services, banks, types of banks, e-banking, comparative study of current account, savings account and fixed deposit account; digital payments.

13. Insurance: An Introduction - Meaning, Characteristics, Types of Insurance, Principles of Insurance, Types of Insurance Contracts, Reinsurance and Double Insurance, Difference between Reinsurance and Double Insurance, Insurance and Assurance, Advantages or Importance of Insurance, Insurance of Other Risks.

14. Life Insurance, Fire and Marine Insurance (A) Life Insurance, Meaning, Life Insurance has both elements of protection and investment, Principles of Life Insurance, Types of Life Insurance Provisions, Is Life Insurance Contract a Contract of Indemnity?, Method/Procedure of taking Life Insurance, (B) Fire Insurance, Nature of Fire Insurance, Types of Fire Insurance Provisions, Essential Features or Elements of Fire Insurance Contract, (C) Marine Insurance, Subject Matter of Marine Insurance, Principles of Marine Insurance, Essential Elements/Features of Marine Insurance Contract, Miscellaneous Insurance and Health Insurance, Difference between Life Insurance, Fire Insurance and Marine Insurance, Difference between Life Insurance and General Insurance.

15. Postal and Telecom Services/Message Services Meaning of messaging, means of messaging, 1. National Savings Certificates, II. Kisan Vikas Patra, III. Public Provident Fund, IV. Monthly Income Scheme, Recurring Deposit, Modern Media/Modern Trends, II. Telecom or Telecommunication Services.

16. Business Services - Warehousing Storage warehousing, functions or advantages of warehousing, types, characteristics of ideal storage or warehouse, warehousing in India.

17. E-Business and Externalization of Services Meaning of E-Business, Meaning of E-Commerce, E-Commerce and E-Business, Scope of E-Business, Difference between traditional

and E-Business, Advantages of E-Commerce, Opportunities from E-Business, Limitations of E-Business, Security and Security of E-Transactions, Security of Business Transactions (Deals), Measures to Secure E-Business Transactions, Resources required for E-Commerce, Online Transactions, After Sales Service, E-Business, Barriers to

Growth/Expansion of E-Commerce, Future of E-Commerce or E-Business in India, Web Directory, Concept, Meaning of Externalization of Services, Types of External Services, BPO or Call Centre, Difference between BPO and KPO, Automated Teller Machine, Smart Card.

18. Concept of Social Responsibility Work in favour of social responsibility, business and environmental protection, impact of environmental pollution on business, business ethics, social values and business ethics.

19. Concept of Business Finance Meaning of Business Finance, Definitions, Characteristics, Importance of Finance, Sources or Means of Business Finance, Shares, Re-appropriation of Profit/Retained Profit/Undistributed Profit/Disinvestment, Debt Fund or Borrowed Capital, Difference between Shareholders and Debenture Holders, Difference between Equity Share and Preference Share, Difference between Share and Debenture, Public Deposit or Public

Deposit, Commercial Credit, Global Depository Receipt, American Depository Receipt and Indian Depository Receipt, Institutional Finance Management, Indian Unitary Enterprises, National Industrial Development Corporation, State Financial Corporations.

20. Introduction to the topic - Concept, meaning and definitions of entrepreneurship, need/importance of entrepreneurship, objectives of entrepreneurship development programmes, difference between teaching and training, importance of training, process of entrepreneurship development, types of entrepreneurship development training, intellectual property rights.

21. Small Business: An Introduction - Meaning of small business, role and importance of small scale industries, role of small business in rural India, problems of small scale industries,

financial assistance to industries in rural, backward and hilly areas, assistance and promotion of small scale and cottage industries by the government.

22. Internal Trade Meaning and Types Wholesale Trade Meaning and Services, Characteristics of Wholesale Trade, Types of Wholesale Trader, Functions of Wholesaler, Organization of Wholesaler, Wholesale Trade is Essential,

Retailing: Meaning and Types - Functions of a Retailer, Essentials for Success of Retailers, Services of a Retailer, Problems of Retailers in India, Suggestions for Solving the Problems, GST - Goods and Services Tax, Chain Stores or Multiple Shops, Departmental Stores and Multiple Sales Outlets or

Difference between chain stores, postal trade, consumer co-operative stores, malls, automatic vending machines, chambers of commerce and industries, difference between retailers and wholesalers.

23. International Business Meaning of International Business, Nature of International Business, Difference between Internal Trade and External or International Business, Scope of International Business, Importance or Advantages of International Trade, Legal Status of Disadvantages of International Trade, Obstacles to International Business, Sources of Primary Information for entering External or International Trade Business, Methods of Entry into International Business.

Import Trade Meaning of Import Trade.

Export Trade - Meaning of Export Trade, Main Documents used in Export Trade, Need for Export Promotion in India, Government Efforts for Export Promotion, Suggestions for Export

Promotion, Explanation of some important articles used in foreign trade, Difference between Bill of Lading, Charter Party and Captain's Receipt.

24. WTO - Meaning and Role Features, objectives, functions of WTO, organisational structure of WTO, WTO and India, benefits to India from world trade agreements or arguments in favour of WTO, World Bank, International Monetary Fund, United Nations Conference on Trade and

Development (UNCTAD), Multinational Investment Guarantee Agency, Indian Trade Promotion Organisation (ITPO).

Project Task: An Introduction 1. Subject matter of the project: An introduction

2. Production process and waste management

3. Human Resource Management

4. Levels of management and working system of various departments.

25. Nature and Importance of Management Concept, Meaning and Definitions of Management, Difference between Effectiveness and Efficiency, Characteristics of Management, Objectives of Management, Importance of Management, Nature of Management, Discussion of some important statements, Levels of Management, Functions of Management, Coordination, Concept and Importance, Difference between Coordination and Co-operation.

26. Principles of Management - Concept of Management Principles, Need and Importance of Management Principles, Principles of Management propounded by Henry Fayol, Difference between Unity of Command and Unity of Direction, Scientific Management: Principles and Methods, Difference between Time Study and Motion Study, Difference between Work Method Study and Motion Study, Foreman appointed in a factory and his responsibilities,

Comparative Study of the Principles of Taylor and Fayol, Dissimilarities or Differences in the Ideas of Taylor and Fayol.

27. Management and Business Environment Business environment- concept, importance of business environment, components of business environment, main components of macro or general environment or dimensions of business environment, Market, difference between capital market and money market, difference between primary market and Main components of economic environment, Economic environment in India, Various economic reforms, Objectives of economic reforms, Objectives of economic reforms or major changes made in

economic policy by the Government of India since 1991, Impact of changes in government policy on business and industry, Managerial response to changes in business environment.

28. Planning - Planning: Concept, objectives of planning, importance or benefits of planning, limitations/obstacles and difficulties of planning, planning process or technique or steps, types of plans, difference between permanent and single use plans, difference between aim and objective, difference between objective and frontline, difference between objective and policy, difference between strategy and policy, difference between policy and procedure, difference between procedures and methods (methods), difference between policy and rule, difference between rule and method or method, difference between budget and method, essential things for effective planning or essential characteristics of a good planning.

29. Organization - Concept of organization, Characteristics of organization, Importance or advantages of organization, Concepts of organization, Organization process, Organizational structure or framework, Types or forms of organization structure or framework, Functional and divisional organization structure: A comparative study, Difference between formal and informal organization, Devolution of authority or delegation, Elements of devolution of authority, Difference between authority and responsibility, Difference between responsibility and accountability, Comparative study of elements of devolution of authority, Difference between devolution of authority and decentralization, Difference between centralization and decentralization.

30. Staffing - Meaning and definitions of staffing, Characteristics of staffing, Importance and need of staffing, Human Resource Management concept, Staffing process, Recruitment, XI Difference between internal and external sources of recruitment, Selection of employees, Difference between recruitment and selection, Training and development, Difference between on-the-job training and off-the-job training methods, Development, Difference between training and development, Comparison between training, development and education.

31. Direction: Concept of direction, meaning of direction, importance of direction, principles of direction, elements of direction, supervision, difference between direction and supervision, motivation, pyramid showing the order of need priority of matters, difference between monetary and non-monetary motivation, leadership: difference between management skills and leadership, communication, formal communication network, difference between formal and informal communication.

32. Controlling - Meaning of controlling, control process, standards used in various functional areas, advantages of control at critical points and management by exception, techniques of managerial control.

33. Financial Management - Business Finance: Concept, Meaning of Business Finance, Financial Management, Financial Decisions, Strategic Planning, Capital Structure, Fixed Capital and Working Capital, Net and Gross Working Capital, Working Capital.

34. Financial Market - There are two major sectors in the economy, meaning of financial market, definitions, demand and supply of finance, functions of financial market, financial market, money market, difference between certificate of deposit and fixed deposit, capital

Difference between capital market and money market, Difference between primary market and secondary market, stock market/stock exchange stock market, Securities and Exchange Board of India.

35. Marketing Management - Concepts related to marketing or basis of marketing, marketing concept, meaning of marketing, definition of marketing, characteristics of marketing, what can be marketed, marketing management, functions of marketing, marketing management philosophies/concepts, comparative study of various management marketing philosophies, marketing and selling, difference between selling and marketing, marketing mix: concept, elements of marketing mix, product mix, labelling, packaging, price mix, place mix, physical distribution, importance of physical distribution, promotion mix/promotional mix,

advertising: concept, role and objections, personal selling, difference between advertising and personal selling, sales promotion and public relations, public relations.

36. Consumer Protection - Meaning of consumer protection, some examples of consumer exploitation in India, importance of consumer protection, statutory protection to consumers, Consumer Protection Act, 1986, rights of consumers, responsibilities of consumers, ways and means of consumer protection, three-tier judicial system or redressal agencies under the Consumer Protection Act, summary of three-tier redressal agencies, role of consumer organisations and NGOs, role of newspapers.

ECONOMICS

1. Introduction - What is Economics?, Statistics, Meaning, Scope and Importance.

2. (Collection, organization and presentation of data) Collection of data (primary and secondary data), methods of collection of data, classification and tabulation of data, presentation of data through diagrams, presentation of data through dot diagrams.

3. (Statistical Tools and Interpretation) Measure of central tendency, measure of dispersion, correlation, coordinates or index numbers.

4. (Development Experience (1947-90) and Economic Reforms Adopted Since 1991) Indian Economy at the Time of Independence, General Aims (or Objectives) of Five Year Plans in India, Agriculture – Characteristics, Problems and Policies, Industry – Characteristics, Problems and Policies (Industrial Licensing etc.), India's Foreign Trade – Characteristics, Problems and Policies, Economic Reforms in India – Liberalisation, Privatisation and Globalisation (LPG) Policies.

5. (Current Challenges Facing Indian Economy) - Main Programs of Poverty and Poverty Alleviation, Rural Development: Key Issues, Human Capital Formation, Employment: Prosperity, Abhipracharalization and Other Issues, Currency Explosion: Problems and Policies, Infrastructure Meaning and Types.

6. (India's Development Experience) - India's Development Experience: A Comparison with Pakistan and China, Project Creation in Economics.

7. (Introduction) Microeconomics – An introduction, central problems of economics.

8. (Consumer Behaviour and Demand) - Consumer equilibrium, demand and law of demand, price elasticity of demand.

9. (Production Behaviour and Supply) - Production Function: Returns to a factor and returns to scale, concepts of cost and revenue, Producer's equilibrium: meaning and conditions, Supply and elasticity of supply.

10. (Types of Markets and Common Applications of Price Determination under Perfect Competition) -

Different forms of market: intent and characteristics, pricing in perfect competition, application of means of demand and supply.

11. (National Income and Related Aggregates) An introduction to macroeconomics, circular flow of income, aggregates and concepts related to national income, measurement of national income.

12. (Money and Banking) Meaning of Money, Origin and Functions, Commercial Banks and Credit Infusion, Meaning and Functions of Central Bank, Recent Important Reforms and Aspects of Indian Banking System, Privatization and Modernization.

13. (Determination of Income and Employment) Aggregate demand, aggregate supply and related concepts, meaning, effects and measures to correct excess demand, meaning, effects and measures to correct deficient demand.

14. (Indian Economy and Government Budget) Government Budget and Economy:.

15. (Balance of Payments and Foreign Exchange Rate) Balance of Payments, Foreign Exchange Rate.

PART-B

Educational Psychology, Assessment and Evaluation in Education, Pedagogy, Educational Aptitude

Educational Psychology

Study methods in educational psychology, human development, physical development, mental development, emotional development, social development, moral development, adolescent development and problems, guidance and

counseling, learning, factors affecting learning, theories of learning, intelligence, creativity, children with special needs, individual differences, personality, personality theories, adjustment, motivation

Assessment and Evaluation in Education

1. Assessment and Evaluation: Meaning, definition, types of assessment techniques, basis of assessment, Demerits of the current assessment system, differences between assessment, evaluation, examination/testing, continuous and comprehensive evaluation.
2. Assessment of Subject-Based Learning: Assessment tools and strategies, assignments and types, construction and classification of achievement tests, planning, construction, and its steps.

3. Teachers' ability to create appropriate instruments: Designing assessment instruments, using class- and subject-specific instruments, characteristics and types of imagination, objectives and types of appropriate assessment criteria, setting and using standards, types of feedback, creating and storing learner profiles, portfolios, rubrics, maintaining student profiles.
4. Testing: Types of tests, classification, essential qualities of a good test, administration, achievement tests in different subjects.

Pedagogy

1. Nature and scope of subjects:. Concepts, history, subject aesthetics, and scope. Logical validity of conclusions
2. Student inquiry: Assessing student readiness, relating learning to real life, opportunities for independent problem solving, group learning strategies, and promoting classroom dialogue.
3. Aims and Achievable Objectives: Aims, objectives, and achievable objectives of education in the National Curriculum Framework 2005 and 2023 , broad subject-specific objectives in school education.

4. Subject curriculum: Principles of curriculum design, curriculum at different school levels. State curriculum Framework

5. Lesson planning and methods for teaching and learning concepts: Various teaching methods and lesson plans, various learning resources (textbooks, audio-visual, multimedia, etc.).

Pedagogical Attitudes

1. Knowledge and learning: Meaning, nature, significance, various areas of knowledge, cultural knowledge, and values.
2. Teaching as a profession: Positive attitude, interest, and aptitude.
3. Understanding the teaching-learning process: Discipline, receptivity, teaching skills. Criteria for an effective teaching process, effective communication.
4. Constructivist teaching-learning process: Knowledge construction process, characteristics of a constructivist classroom, constructivist teachers.
5. Teacher professional development: Pre-service and in-service training programs, professional learning community, leadership qualities and group dynamics.
6. Gender perspective on education: Biological, social, and psychological determinants of gender, social psychology of gender roles, educational policies and gender concerns, gender issues in education.

Part C

General Studies

सामान्य हिंदी (**अंक - 5)**

01. स्वर, व्यंजन, वर्तनी
02. लिंग, वचन, काल
03. संज्ञा, सर्वनाम, विशेषण, क्रिया, क्रिया विशेषण, कारक
04. समास रचना एवं प्रकार
05. संधि- स्वर, व्यंजन एवं विसर्ग संधि
06. व्याकरणिक अशुद्धियाँ
07. शब्द रचना उपसर्ग एवं प्रत्यय
08. शब्द प्रकार, तत्सम तदभव, देशज, विदेशी

09. पर्यायवाची, विलोम शब्द, अनेकार्थी शब्द, अनेक शब्दों या वाक्यांश के लिए एक शब्द

General English (5 Marks)

1. Number, Gender, Articles
2. Noun, Pronoun, Adjectives, Verb, Adverb
3. Preposition and Conjunctions
4. Synonyms, Antonyms, Homonyms,
5. One word substitution
6. Spellings, Prefixes, Suffixes
7. Proverb and Idioms
8. Active/Passive Voice
9. Sentences (Declarative, Negative, Interrogative, Imperative, Exclamatory)
10. Punctuations

General Mental Ability (05 Marks)

Reasoning, seeing relationships, analogies, numerical ability, spatial relationships, etc.

To test these factors, it will include questions like: spotting odds, numerical series, letter series, seeing relationships between letters, numbers and pictures, symbolic language, hidden pictures, squares and numbers, mathematical operations, matching pictures, various types of cube patterns, etc.

Computer Education (05 Marks)

- **Introduction to Computers:** What is a computer? Uses of computers in daily life (education, banking, healthcare, office work, communication, etc.),

Importance and limitations of computers, General characteristics of computers.

- **Major Components of a Computer:** Introduction to hardware and software, CPU (Central Processing Unit), ALU, CU, Memory, Input devices (keyboard, mouse, scanner, touchpad, etc.), Output devices (monitor, printer, speakers, etc.).
- **Types of Printers**: Inkjet printers, LaserJet printers, Dot Matrix printers, Thermal and other modern printers.
- **Operating Systems:** Role of an operating system, MS-DOS, Commercial operating systems (Windows, MacOS, etc.), Open-source operating systems (Linux, Ubuntu, etc.).
- **Microsoft Office for Office Use:** MS Word – Creating, editing, and formatting documents.MS Excel – Tables, formulas, and charts.MS PowerPoint – Slide creation, design, and presentations.
- **Use of the Internet:** Introduction to the Internet, Inbox, Outbox, CC, BCC, Creating and sending emails, Searching online documents, Website browsing, General knowledge of various government department websites.
- **Antivirus and Computer Security:** What is a computer virus? Types of viruses, Damages caused by viruses, Importance of antivirus software, Safety and security measures.
- **Use of Multimedia:** Meaning of multimedia, Use of audio, video, and text, Applications of multimedia.
- **Storage Devices:** Primary and secondary storage, Hard disk, pen drive, CD/DVD, Introduction to cloud storage.
- **Search Engines and Online Platforms:** Google, YouTube, What is a search engine? How to search for required information? Safe and effective searching techniques.

General Knowledge **(05 Marks)**

64. Major Constitutional Provisions, Fundamental duties and rights under the Indian Constitution, Indian political system and constitutional rights, Right to Information (RTI), Cultural and national personalities, Democracy and elections, Lok Sabha and Rajya Sabha.
65. Indian History and National Movement, Indian civilization and culture, Historical events ,History of Indian independence from 1857 to 1947, Events that occurred after 1947.
66. Geography: Basic geography, Geography of India and the World.
67. Indian Economy: Social and economic development, Population perspective, Gross National Product (GNP) and per capita income, Five-Year Plans, Agriculture and rural development, Industrial development, Indian economy and banking system, Current economic events
68. General Science: Basic concepts related to physics, chemistry, biology, and botany
69. General Knowledge of Chhattisgarh: History of Chhattisgarh, Geography of Chhattisgarh, Political system, Economy, Government schemes, Awards and honors, Traditions, folk songs and music, important personalities, other important topics related to Chhattisgarh.
70. National Education Policy Part 1 School Education (NEP) 2020.

Lecturer - Chemistry

Total Mark - 100

Content	Marks
PART-A **1. Physical Chemistry**	20
2. **Inorganic Chemistry**	10
3. **Organic Chemistry**	30
PART-B Educational Psychology, Assessment and Evaluation in Education, Pedagogy, Educational Aptitude	15
PART-C Language Proficiency and General Studies	25
TOTAL	100

Part 1 – Physical Chemistry 20 Marks

1.Some Basic Concepts of Chemistry - General Introduction: Importance and scope of Chemistry, Nature of matter, laws of chemical combination, Dalton's atomic theory: concept of elements, atoms and molecules, atomic and molecular masses, mole concept and molar mass, percentage composition, empirical and molecular formula, chemical reactions, stoichiometry and calculations based on stoichiometry.

2.Structure of Atom - Discovery of Electron, Proton and Neutron, atomic number, isotopes and isobars. Thomson's model and its limitations. Rutherford's model and its limitations, Bohr's model and its limitations, concept of shells and subshells, dual nature of matter and light, de Broglie's relationship, Heisenberg uncertainty principle, concept of orbitals, quantum numbers, shapes of s, p and d orbitals, rules for filling electrons in orbitals - Aufbau principle, Pauli's exclusion principle and Hund's rule, electronic configuration of atoms, stability of half-filled and completely filled orbitals.

3.Classification of Elements and Periodicity in Properties - Significance of classification, brief history of the development of periodic table, modern periodic law and the present form of periodic table, periodic trends in properties of elements -atomic radii, ionic radii, inert gas radii, Ionization enthalpy, electron gain enthalpy, electronegativity, valancy, Nomenclature of elements with atomic number greater than 100.

4.Chemical Bonding and Molecular Structure - Valence electrons, ionic bond, covalent bond, bond parameters, Lewis structure, polar character of covalent bond, covalent character of ionic bond, valence bond theory, resonance, geometry of covalent molecules, VSEPR theory, concept of hybridization, involving s, p and d orbitals and shapes of some simple molecules, molecular orbital theory of homonuclear diatomic molecules (qualitative idea only), Hydrogen bond.

5.Chemical Thermodynamics - Concepts of System and types of systems, surroundings, work, heat, energy, extensive and intensive properties, state functions. First law of thermodynamics -internal energy and enthalpy, heat capacity and specific heat, measurement of ΔU and ΔH, Hess's law of constant heat summation, enthalpy of bond dissociation, combustion, formation, atomization, sublimation, phase transition, ionization, solution and dilution. Second law of Thermodynamics

(brief introduction), Introduction of entropy as a state function, Gibb's energy change for spontaneous and non- spontaneous processes, criteria for equilibrium, Third law of thermodynamics (brief introduction).

6.Equilibrium - Equilibrium in physical and chemical processes, dynamic nature of equilibrium, law of mass action, equilibrium constant, factors affecting equilibrium – Le Chatelier's principle, ionic equilibrium- ionization of acids and bases, strong and weak electrolytes, degree of ionization, ionization of poly basic acids, acid strength, concept of pH, hydrolysis of salts (elementary idea), buffer solution, Henderson Equation, solubility product, common ion effect (with illustrative examples).

7.Redox Reactions - Concept of oxidation and reduction, redox reactions, oxidation number, balancing redox reactions, in terms of loss and gain of electrons and change in oxidation number, applications of redox reactions.

8.Solutions - Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, Raoult’s law, colligative properties - relative lowering of vapour pressure, elevation of boiling point, depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass, Van't Hoff factor

9.Electrochemistry - Redox reactions, EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells, Relation between Gibbs energy change and EMF of a cell, conductance in electrolytic solutions, specific and molar conductivity, variations of conductivity with concentration, Kohlrausch's Law, electrolysis and law of electrolysis (elementary idea), dry cell-electrolytic cells and Galvanic cells, lead accumulator, fuel cells, corrosion.

10.Chemical Kinetics - Rate of a reaction (Average and instantaneous), factors affecting rate of reaction: concentration, temperature, catalyst; order and molecularity of a reaction, rate law and specific rate constant, integrated rate equations and half-life (only for zero and first order 10 reactions), concept of collision theory (elementary idea, no mathematical treatment), activation energy, Arrhenius equation.

Part II Inorganic Chemistry 10 Marks

1 d and f Block Elements - General introduction, electronic configuration, occurrence and characteristics of transition metals, general trends in properties of the first row transition metals – metallic character, ionization enthalpy, oxidation states, ionic radii, colour, catalytic property, magnetic properties, interstitial compounds, alloy formation, preparation and properties of K2Cr2O7 and KMnO4.

Lanthanides - Electronic configuration, oxidation states, chemical reactivity and lanthanide contraction and its consequences.

Actinides – Electronic configuration, oxidation states and comparison with lantha6nides

2.Coordination Compounds - Coordination compounds - Introduction, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds. Bonding, Werner's theory, VBT, and CFT; structure and stereoisomerism, importance of coordination compounds (in qualitative analysis, extraction of metals and biological system).

Part III Organic Chemistry 30 Marks

1.Organic Chemistry – Some Basic Principles and Techniques General introduction, methods of purification, qualitative and quantitative analysis, classification and IUPAC nomenclature of organic compounds. Electronic displacements in a covalent bond: inductive effect, electrometric effect, resonance and hyper conjugation. Homolytic and heterolytic fission of a covalent bond: free radicals, carbocations, carbanions, electrophiles and nucleophiles, types of organic reactions.

2.Hydrocarbons - Aliphatic Hydrocarbons Alkanes - Nomenclature, isomerism, conformation (ethane only), physical properties, chemical reactions including free radical mechanism of halogenation, combustion and pyrolysis. Alkenes - Nomenclature, structure of double bond (ethene), geometrical isomerism, physical properties, methods of preparation, chemical reactions: addition of hydrogen, halogen, water, hydrogen halides (Markovnikov's addition and peroxide effect), ozonolysis, oxidation, mechanism of electrophilic addition. Alkynes - Nomenclature, structure of triple bond (ethyne), physical properties, methods of preparation, chemical reactions: acidic character of alkynes, addition reaction of - hydrogen, halogens, hydrogen halides and water. Aromatic Hydrocarbons Introduction, IUPAC nomenclature, benzene: resonance, aromaticity, chemical properties: mechanism of electrophilic substitution. Nitration, sulphonation, halogenation, Friedel Craft's alkylation and acylation, directive influence of functional group in mono substituted benzene, carcinogenicity and toxicity.

3. Haloalkanes: Nomenclature, nature of C–X bond, physical and chemical properties, optical rotation mechanism of substitution reactions. Haloarenes: Nature of C–X bond, substitution reactions (Directive influence of halogen in monosubstituted compounds only). Uses and environmental effects of - dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT.

4.Alcohols, Phenols and Ethers - Alcohols: Nomenclature, methods of preparation, physical and chemical properties (of primary alcohols only), identification of primary, secondary and tertiary alcohols, mechanism of dehydration, uses with special reference to methanol and ethanol. Phenols: Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenols. Ethers: Nomenclature, methods of preparation, physical and chemical properties, uses

5.Aldehydes, Ketones and Carboxylic Acids - Aldehydes and Ketones: Nomenclature, nature of carbonyl group, methods of preparation, physical and chemical properties, mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes, uses.

Carboxylic Acids: Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.

6.Amines Amines: Nomenclature, classification, structure, methods of preparation, physical and chemical properties, uses, identification of primary, secondary and tertiary amines. Diazonium salts: Preparation, chemical reactions and importance in synthetic organic chemistry.

7.Biomolecules - Carbohydrates - Classification (aldoses and ketoses), monosaccahrides (glucose and fructose), D-L configuration oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen); Importance of carbohydrates. Proteins -Elementary idea of - amino acids, peptide bond, polypeptides, proteins, structure of proteins - primary, secondary, tertiary structure and quaternary structures (qualitative idea only), denaturation of proteins; enzymes. Hormones - Elementary idea excluding structure. Vitamins - Classification and functions. Nucleic Acids: DNA and RNA.

Part B:

Educational Psychology and Pedagogy: (Marks-15)

Educational Psychology

Study methods in educational psychology, human development, physical development, mental development, emotional development, social development, moral development, adolescent development and problems, guidance and counseling, learning, factors affecting learning, theories of learning, intelligence, creativity, children with special needs, individual differences, personality, personality theories, adjustment, motivation

Assessment and Evaluation in Education

1. Assessment and Evaluation: Meaning, definition, types of assessment techniques, basis of assessment, Demerits of the current assessment system, differences between assessment, evaluation, examination/testing, continuous and comprehensive evaluation.

2. Assessment of Subject-Based Learning: Assessment tools and strategies, assignments and types, construction and classification of achievement tests, planning, construction, and its steps.

3. Teachers' ability to create appropriate instruments: Designing assessment instruments, using class- and subject-specific instruments, characteristics and types of imagination, objectives and types of appropriate assessment criteria, setting and using standards, types of feedback, creating and storing learner profiles, portfolios, rubrics, maintaining student profiles.

4. Testing: Types of tests, classification, essential qualities of a good test, administration, achievement tests in different subjects.

Pedagogy

1. Nature and scope of subjects: Concepts, history, subject aesthetics, and scope. Logical validity of conclusions

2. Student inquiry: Assessing student readiness, relating learning to real life, opportunities for independent problem solving, group learning strategies, and promoting classroom dialogue.

3. Aims and Achievable Objectives: Aims, objectives, and achievable objectives of education in the National Curriculum Framework 2005 and 2023, broad subject-specific objectives in school education.

4. Subject curriculum: Principles of curriculum design, curriculum at different school levels. State curriculum Framework

5. Lesson planning and methods for teaching and learning concepts: Various teaching methods and lesson plans, various learning resources (textbooks, audio-visual, multimedia, etc.).

Pedagogical Attitudes

1. Knowledge and learning: Meaning, nature, significance, various areas of knowledge, cultural knowledge, and values.

2. Teaching as a profession: Positive attitude, interest, and aptitude.

3. Understanding the teaching-learning process: Discipline, receptivity, teaching skills. Criteria for an effective teaching process, effective communication.

4. Constructivist teaching-learning process: Knowledge construction process, characteristics of a constructivist classroom, constructivist teachers.

5. Teacher professional development: Pre-service and in-service training programs, professional learning community, leadership qualities and group dynamics.

6. Gender perspective on education: Biological, social, and psychological determinants of gender, social psychology of gender roles, educational policies and gender concerns, gender issues in education.

Part C

General Studies & General Hindi/English **(25 Marks)**

सामान्य हिंदी **(अंक - 5)**

01. स्वर, व्यंजन, वर्तनी
02. लिंग, वचन, काल
03. संज्ञा, सर्वनाम, विशेषण, क्रिया, क्रिया विशेषण, कारक
04. समास रचना एवं प्रकार
05. संधि- स्वर, व्यंजन एवं विसर्ग संधि
06. व्याकरणिक अशुद्धियाँ
07. शब्द रचना उपसर्ग एवं प्रत्यय
08. शब्द प्रकार, तत्सम तदभव, देशज, विदेशी
09. पर्यायवाची, विलोम शब्द, अनेकार्थी शब्द, अनेक शब्दों या वाक्यांश के लिए एक शब्द

General English **(5 Marks)**

1. Number, Gender, Articles
2. Noun, Pronoun, Adjectives, Verb, Adverb
3. Preposition and Conjunctions
4. Synonyms, Antonyms, Homonyms,
5. One word substitution
6. Spellings, Prefixes, Suffixes
7. Proverb and Idioms
8. Active/Passive Voice
9. Sentences (Declarative, Negative, Interrogative, Imperative, Exclamatory)

10. Punctuations

General Mental Ability (05 Marks)

Reasoning, seeing relationships, analogies, numerical ability, spatial relationships, etc.

To test these factors, it will include questions like: spotting odds, numerical series, letter series, seeing relationships between letters, numbers and pictures, symbolic language, hidden pictures, squares and numbers, mathematical operations, matching pictures, various types of cube patterns, etc.

Computer Education (05 Marks)

- **Introduction to Computers:** What is a computer? Uses of computers in daily life (education, banking, healthcare, office work, communication, etc.), Importance and limitations of computers, General characteristics of computers.
- **Major Components of a Computer:** Introduction to hardware and software, CPU (Central Processing Unit), ALU, CU, Memory, Input devices (keyboard, mouse, scanner, touchpad, etc.), Output devices (monitor, printer, speakers, etc.).
- **Types of Printers**: Inkjet printers, LaserJet printers, Dot Matrix printers, Thermal and other modern printers.
- **Operating Systems:** Role of an operating system, MS-DOS, Commercial operating systems (Windows, MacOS, etc.), Open-source operating systems (Linux, Ubuntu, etc.).
- **Microsoft Office for Office Use:** MS Word – Creating, editing, and formatting documents.MS Excel – Tables, formulas, and charts.MS PowerPoint – Slide creation, design, and presentations.

- **Use of the Internet:** Introduction to the Internet, Inbox, Outbox, CC, BCC, Creating and sending emails, Searching online documents, Website browsing, General knowledge of various government department websites.
- **Antivirus and Computer Security:** What is a computer virus? Types of viruses, Damages caused by viruses, Importance of antivirus software, Safety and security measures.
- **Use of Multimedia:** Meaning of multimedia, Use of audio, video, and text, Applications of multimedia.
- **Storage Devices:** Primary and secondary storage, Hard disk, pen drive, CD/DVD, Introduction to cloud storage.
- **Search Engines and Online Platforms:** Google, YouTube, What is a search engine? How to search for required information? Safe and effective searching techniques.

General Knowledge (05 Marks)

71. Major Constitutional Provisions, Fundamental duties and rights under the Indian Constitution, Indian political system and constitutional rights, Right to Information (RTI), Cultural and national personalities, Democracy and elections, Lok Sabha and Rajya Sabha.
72. Indian History and National Movement, Indian civilization and culture, Historical events ,History of Indian independence from 1857 to 1947, Events that occurred after 1947.
73. Geography: Basic geography, Geography of India and the World.
74. Indian Economy: Social and economic development, Population perspective, Gross National Product (GNP) and per capita income, Five-Year Plans, Agriculture and rural development, Industrial development, Indian economy and banking system, Current economic events
75. General Science: Basic concepts related to physics, chemistry, biology, and botany
76. General Knowledge of Chhattisgarh: History of Chhattisgarh, Geography of Chhattisgarh, Political system, Economy, Government schemes, Awards and honors, Traditions, folk songs and music, important personalities, other important topics related to Chhattisgarh.
77. National Education Policy Part 1 School Education (NEP) 2020.

Lecturer- Physics

Total Marks-100

S.NO.	CONTENT	MARKS
1	**PART A** Modern and Nuclear Physics	15
2	Electrodynamics and Magnetism	15
3	Sound and lighting	15
4	Gravitational and dynamical	15
5	**PART B** Educational Psychology, Assessment and Evaluation in Education, Pedagogy, Educational Aptitude	15
6	**PART C** Language Proficiency and General Studies	25
	TOTAL	100

Syllabus- (Physics)

LECTURER

1. The world of physics - the purpose and motivation of physics, the nature of physical laws, physics, experiments, and society.

2. Units and measurement - the need for measurement; units and measurement; systems of units; SI units; fundamental and derived units; measurement of length, mass, and time; diagrams; dimensions of physical quantities, dimensional analysis, and its applications.

3. One-dimensional motion - reference systems, motion along a straight line, position-time graphs, speed and velocity, explanation of motion through elementary knowledge of differentiation and integration, uniform and non-uniform motion, velocity-time graphs, and position-time graphs. Relations of uniformly accelerated motion (graphical analysis).

4. Motion in a plane (two-dimensional motion) - Scalar and vector quantities, position and displacement vectors, normal vectors and their representation, equal vectors, multiplication of a vector by a real number, sum and difference of vectors, relative velocity, unit vectors, decomposition of vectors in a plane, rectangular components, scalar and vector multiplication. Motion in a plane, motion with uniform velocity and acceleration, projectile motion, uniform circular motion.

5. Laws of motion - concept of force, inertia, Newton's first law of motion, momentum, Newton's second law of motion, impulse, Newton's third law of motion. Law of conservation of linear momentum and its applications. Balance of homogeneous forces, static and kinetic friction, laws of friction, rolling friction, lubricants. Dynamics of uniform circular motion, centripetal force, examples of circular motion (motion of a car on a circular plane road, motion of a car on a banked road).

6. Work, Energy, and Power - Work done by a constant and variable force, kinetic energy, the work-energy theorem, and power. The concept of potential energy, potential energy of a spring, conservative forces, conservation of mechanical energy (potential and kinetic energy), non-conservative forces, vertical circular motion, one-dimensional and two-dimensional elastic and inelastic collisions.

7. Systems of Particles and Rotational Motion - Center of mass of a two-particle system, conservation of momentum and motion of the center of mass, center of mass of a rigid body, center of mass of a uniform rod. torque, angular momentum, the law of conservation of angular momentum and its applications. Equilibrium of rigid bodies, rotation of rigid bodies and equations of rotational motion, comparison of linear and rotational motion. Moment of inertia, radius of gyration, formulas for moment of inertia of objects of simple geometric shapes, parallel and perpendicular axis theorems, and their applications.

8. Gravitation—Kepler's laws of planetary motion, universal gravitation, gravitational acceleration, variation of gravitational acceleration with altitude, depth, and position, gravitational potential energy, gravitational potential, orbital velocity of a satellite, geostationary satellite.

9. Mechanical properties of solids—elastic behavior, stress-strain relationship, Hooke's law, Young's modulus of elasticity, volumetric elastic modulus, modulus of rigidity, Poisson's result, elastic energy.

10. Mechanical properties of fluids—pressure due to a fluid column, Pascal's law and its applications (hydraulic elevators, hydraulic brakes), effect of gravity on fluid pressure, viscosity, Stokes' law, terminal velocity, streamline and turbulent flow, critical velocity, Bernoulli's theorem and its applications. Surface energy and surface tension, angle of contact, excess pressure on a curved surface, applications of surface tension, concept of drop, bubble and capillarity.

11. Thermal properties of substances: Heat, temperature, thermal expansion, thermal expansion of solids, thermal expansion of liquids and gases, anomalous expansion of water, specific heat, heat capacity, C_P, C_V calorimetry, phase change, latent heat capacity.

Heat transfer: Conduction, convection, and radiation, thermal conductivity, qualitative analysis of black-body radiation, Wien's displacement law, Stefan's law, greenhouse effect.

12. Thermodynamics: Thermal equilibrium and definition of heat (zeroth law of thermodynamics), heat, work, and internal energy, first law of thermodynamics, isothermal and adiabatic processes, heat engines, and refrigerators.

13. Kinetic theory of gases - Equation of state of an ideal gas, work done in compression of a gas, kinetic theory of gases, postulates, concept of pressure, kinetic concept of temperature, root mean square speed of gas molecules, degrees of freedom, law of equal partition of energy, its application to specific heat capacity of gases, concept of mean free path, Avogadro's number.

14. Oscillations - periodic motion, time period, frequency, displacement, displacement as a function of time, periodic function, simple harmonic motion (SHM) and its equation, phase, oscillation of a spring, restoring force and force constant, energy in simple harmonic motion, kinetic and potential energy, simple pendulum, expression for time period of a simple pendulum. Free, forced and damped oscillations (qualitative description), resonance.

15. Waves - Wave motion, transverse and longitudinal waves, wave speed, displacement relations of progressive waves, principle of superposition of waves, reflection of waves, stationary waves, standing waves in strings and air columns, normal modes and overtones, beats, Doppler effect.

16. Electric Charge and Field - Frictional electricity, electric charge, types of charges, electronic theory of generation of charge, conductors and insulators, gold leaf electroscope, charging by induction or

electrostatic induction, basic properties of electric charge, Coulomb's law, dielectric constant, vector form of Coulomb's law, force between multiple charges (principle of superposition), comparison of electrostatic force and gravitational force, electric field, electric field intensity due to a point charge, electric force lines or field lines, electric field intensity due to a system of charges, continuous charge distribution, electric dipole, electric dipole moment, electric field due to an electric dipole, torque on an electric dipole placed in a uniform electric field, work done in rotating a dipole in an electric field, potential energy of a dipole in a uniform electric field, Vector area or area vector, electric flux, cubic angle, Gauss theorem, applications of Gauss theorem, derivation of Coulomb's law from Gauss's law.

17. Electrostatic potential and capacitance - Electrostatic potential energy, concept of electrostatic potential, earth's potential, potential at a point due to a point charge, electric potential due to a body of charges, potential at a point due to an electric dipole, factors affecting potential, relation between electric field intensity and electric potential, equipotential surface, potential inside a hollow conductor, electric potential energy of a system of charges, potential energy in an external field, conductors and insulators, electrostatics, electrostatic shielding, dielectrics and polarization, polarization of dielectrics, dielectric strength, capacitor and capacitance of a conductor, capacitance of a spherical conductor, factors affecting capacitance of a conductor, theory of capacitors, types of capacitors, capacitance of a parallel plate capacitor in the presence of a partially dielectric material. Capacitance of a capacitor, electric displacement, combination of capacitors, energy of a charged capacitor, energy stored in a capacitor, potential of a dielectric medium, effect on electric capacitance and energy, redistribution of charges, loss of energy in redistribution of charges, distribution of charge on the surface of a conductor, action of pointed parts, Van de Graaff generator.

18. Current-Electricity - Electric current, drift velocity or drift velocity of free electrons, electric current and drift velocity, Ohm's law, resistance, specific resistance or resistivity, specific conductivity, effect of temperature on resistance and resistivity, color code of carbon resistance, combination of resistors, ohmic and non-ohmic resistance, superconductivity, thermal resistor or thermistor, Kirchhoff's law, Wheatstone bridge, meter bridge, heating effect of electric current, electrical energy, Joule's law for heat generation, electric power, electrical energy used in electrical circuits, power rate, chemical cell, primary cell, secondary cell, emf, difference between emf and potential difference, internal resistance of a cell, combination of cells ,Combination of cells with different emf , potentiometer, sensitivity of potentiometer, uses of potentiometer, comparing emf of two cells with the help of potentiometer, finding the internal resistance of a cell with the help of potentiometer, superiority of potentiometer over voltmeter.

19. Moving Charges and Magnetism - Concept of magnetic field, Oert's experiment, Ampere's law, rules for finding the direction of magnetic field, Biot-Savart's law, comparison of Biot-Savart's law and Coulomb's law, intensity of magnetic field produced by a straight current carrying wire (of infinite length), magnetic field due to a current carrying circular coil, magnetic field at the centre of a current carrying circular coil, magnetic field at the axis of a current carrying circular coil, magnetic field due to a current carrying solenoid, Ampere's circuital law, applications of Ampere's circuital law, magnetic dipole moment of a revolving electron, force on a moving charge in a magnetic field: Lorentz force, work done by Lorentz force, force on a current carrying conductor in a magnetic field, units of magnetic field, force between two parallel current carrying conductors, cyclotron, torque on a current loop in a magnetic field, galvanometer, function of galvanometer Sensitivity, principle of shunt,

conversion of galvanometer into ammeter, conversion of galvanometer into voltmeter.

20. Magnetism and magnetic properties of substances - molecular theory of magnetism, some evidence in favour of molecular theory of magnetism, distinction between magnetic substances and magnets, Coulomb's inverse square law, magnetic field intensity, magnetic moment, magnetic dipole and dipole moment, current loop as a magnetic dipole, magnetic dipole moment of an electron revolving as a magnetic dipole, magnetic lines of force, uniform magnetic field, force due to a magnetic dipole (or bar magnet), magnetic field intensity (axial and axial positions), torque on a bar magnet in a uniform magnetic field, work done in rotating a bar magnet in a uniform magnetic field and potential energy, magnetic field due to a current-carrying solenoid, magnetic field due to a current-carrying solenoid, some important terms to explain the magnetic properties of substances, magnetic properties of substances, Paramagnetic substances, diamagnetic substances, ferromagnetic substances, atomic model of magnetism, electromagnet, permanent magnet, hysteresis curve, terrestrial magnetism, geomagnetic elements, measurement of angle of declination, inclination , origin of earth's magnetic field, northern light.

21. Electromagnetic Induction - Magnetic flux, magnetic flux associated with a varying magnetic field, electromagnetic induction, Faraday's experiments related to electromagnetic induction, Faraday's laws of electromagnetic induction, kinetic emf from Faraday's laws, Lenz's law and Fleming's right hand rule, self-induction, self-inductance for a long solenoid, expression for self-inductance of a plane circular coil, mutual induction, mutual inductance or coefficient of mutual induction, expression for mutual inductance between two long solenoids, mutual inductance between two plane circular coils, combination of two inductive coils, energy stored in inductance, relation between self-inductance and mutual inductance of two coils, eddy currents.

22. Alternating Current - Direct and Alternating Current, Alternating electomotive Force, some definitions, root mean square value, effective voltage or rms voltage, lead and lag in alternating current circuits, phasor diagram, resistance, reactance and impedance, different types of alternating current circuits, A.C. circuit having only ohmic resistance, A.C. circuit having only capacitance, A.C. circuit having only inductance, A.C. circuit having both resistance and capacitance, A.C. circuit having both resistance and inductance, A.C. circuit having both inductance and capacitance, A.C. circuit having all three inductance, capacitance and resistance, resonant circuit, sharpness of resonance: quality or characteristic coefficient, strength in alternating current circuit, wattless current, LC oscillations, dynamo, choke coil, transformer.

23. Electromagnetic waves - displacement current, electromagnetic waves, their production and difference from mechanical waves, brief history of electromagnetic waves, transverse nature of electromagnetic waves, characteristics of electromagnetic waves, electromagnetic spectrum.

24. Ray Optics and Optical Instruments - Reflection of light, laws of reflection, types of reflection, mirror, image, image formed by a plane mirror, spherical mirror, some definitions, rules for formation of images formed by spherical mirrors, position, magnitude and nature of the image of an object placed at different positions in front of a concave mirror, position, magnitude and nature of the image of an object placed in front of a convex mirror, sign convention, relation between focal length and radius of curvature of a spherical mirror, mirror formula, linear magnification, parallax, concept of conjugate focus, spherical aberration, identification of mirrors, uses of concave and convex mirrors, refraction of light, denser and rarer mediums, laws of refraction, types of refractive index, cause of refraction, principle of reversibility of light, refraction of light through a glass slab, refraction of light in different mediums,

apparent and actual depth, some examples of refraction in daily life, total internal Reflection, relation between critical angle and refractive index of a denser medium, some examples of total internal reflection, uses of total internal reflection, refraction of light on a spherical surface, sign convention, refraction on a convex surface, refraction on a concave surface, principal focus, lens, definitions, rules for construction of images formed by lenses, formation of an image by a convex lens, formation of an image by a concave lens, sign convention, refraction by a thin lens, dependence of focal length of a lens, lens formula, linear magnification, Newton's formula, combination of lenses, combined focal length of two thin lenses placed in contact, power of a lens, identification of lenses, uses of lenses, prism, refraction of light by a prism, angle of minimum deviation, formula for refractive index of a prism, dispersion of light, angular dispersion, dispersion power, Newton's experiment on dispersion of white light, spectrum, real and virtual spectrum, impure and pure spectrum, conditions for obtaining pure spectrum, reflection of light Dispersion, rainbow, human eye, angle of view and apparent size of an object, microscope, simple microscope, compound microscope, electron microscope, telescope, astronomical telescope or celestial telescope, terrestrial telescope, Galileo telescope, comparison of astronomical telescope and Galileo telescope, reflecting telescope.

25. Wave Optics - Nature of light, Huygen's wave theory, wavefront, Huygen's theory of secondary wavelets, Doppler effect, principle of superposition of waves, interference of light, phase-related sources, conditions of permanent interference, Young's double-slit experiment, fringe width in Young's experiment, importance of Young's double-slit experiment, colours of thin films, diffraction of light, diffraction and Huygen's theory, diffraction of light by a straight edge, diffraction of light by a single slit, validity of ray optics - Fresnel distance, simple experiments demonstrating diffraction, comparative discussion of

diffraction of sound and light, resolving power, polarization of light, demonstration of polarization in mechanical waves, representation of polarized and unpolarized light, experimental demonstration of polarization of light, plane of vibration and plane of polarization, origin of plane polarized light, polaroid, Melas's law.

26. Dual nature of radiation and matter - Elementary knowledge of electron and photon, electron-volt, work-function and electron emission, photoelectric effect, experimental study of photoelectric effect - Lenard's experiment, laws of photoelectric effect, Einstein's photoelectric equation - particle nature of light, determination of Planck's constant and work-function from Einstein's photoelectric equation, dual nature of radiation. De-Broglie waves or matter waves, experimental demonstration of matter waves - Davisson Germer's experiment.

27. Atom - Thomson's atomic model, Rutherford's α-particle scattering experiment, closest approach distance, collision parameter, Rutherford's atomic model, electron orbits, atomic spectrum, Bohr atomic model: postulates, Bohr's theory of hydrogen atom, energy levels of hydrogen atom, various spectral lines of hydrogen atomic spectrum, excitation potential and ionization potential, limitations of Bohr atomic model, fermion Hertz experiment, explanation of Bohr's second postulate by de Broglie, laser light.

28. Nucleus - Composition of nucleus, properties of nucleus, types of nuclei, atomic mass unit, Einstein's mass-energy relation, nuclear force, nucleus, mass loss and binding energy, radioactivity, causes of radioactivity, nature of Becquerel rays, properties of α-rays, β-rays and ϒ-rays, Soddy-Fajon's displacement law, radioactive decay law, half-life, activity of radioactive substances, average life or mean life of radioactive substances, radioactive decay, energy spectrum of β-particles, nuclear energy, nuclear fission, chain reaction in nuclear fission, thermal neutrons

and moderators, nuclear reactors, nuclear fusion, source of energy in stars, nuclear holocaust.

29. Semiconductor Electronics:Materials, Devices and Simple Circuits - Classification of metals, conductors and semiconductors, energy bands in solids, classification of solids on the basis of energy bands, types of semiconductors, N-type semiconductors, P-type semiconductors, mobility of charge carriers, P-N junction diode, current flow in P-N junction diode, use of P-N junction diode as a rectifier, filter circuits, Zener diode, optoelectronic or photonic junction devices, junction transistors, modes of operation of transistors, working of transistors, characteristic curves, application of transistors as amplifiers, use of transistors as oscillators, use of transistors as switches, features and disadvantages of semiconductor devices, Boolean expressions, logic gates, combinations of basic gates, De-Morgan's theorem, universal gates, elementary concepts of ICs.

30. Communication System - Components of communication system, basic terminology used in electronic communication system, base band signal and bandwidth, bandwidth of transmission medium, propagation of electromagnetic waves and earth's atmosphere, role of ionosphere in radio wave propagation, propagation of radio waves, maximum distance between sender and receiver, line of sight transmission, communication satellite, modulation and need of modulation, amplitude modulation, product of amplitude modulated wave, frequency modulation, demodulation or detection, antenna, FM receiver, fax, modem, internet, mobile telephony, global network system, line communication, double wire line, coaxial cable.

Part B:

Educational Psychology and Pedagogy:

Educational Psychology

Study methods in educational psychology, human development, physical development, mental development, emotional development, social development, moral development, adolescent development and problems, guidance and counseling, learning, factors affecting learning, theories of learning, intelligence, creativity, children with special needs, individual differences, personality, personality theories, adjustment, motivation

Assessment and Evaluation in Education

1. Assessment and Evaluation: Meaning, definition, types of assessment techniques, basis of assessment, Demerits of the current assessment system, differences between assessment, evaluation, examination/testing, continuous and comprehensive evaluation.

2. Assessment of Subject-Based Learning: Assessment tools and strategies, assignments and types, construction and classification of achievement tests, planning, construction, and its steps.

3. Teachers' ability to create appropriate instruments: Designing assessment instruments, using class- and subject-specific instruments, characteristics and types of imagination, objectives and types of appropriate assessment criteria, setting and using standards, types of feedback, creating and storing learner profiles, portfolios, rubrics, maintaining student profiles.

4. Testing: Types of tests, classification, essential qualities of a good test, administration, achievement tests in different subjects.

Pedagogy

1. Nature and scope of subjects: Concepts, history, subject aesthetics, and scope. Logical validity of conclusions

2. Student inquiry: Assessing student readiness, relating learning to real life, opportunities for independent problem solving, group learning strategies, and promoting classroom dialogue.

3. Aims and Achievable Objectives: Aims, objectives, and achievable objectives of education in the National Curriculum Framework 2005 and 2023, broad subject-specific objectives in school education.

4. Subject curriculum: Principles of curriculum design, curriculum at different school levels. State curriculum Framework

5. Lesson planning and methods for teaching and learning concepts: Various teaching methods and lesson plans, various learning resources (textbooks, audio-visual, multimedia, etc.).

Pedagogical Attitudes

1. Knowledge and learning: Meaning, nature, significance, various areas of knowledge, cultural knowledge, and values.

2. Teaching as a profession: Positive attitude, interest, and aptitude.

3. Understanding the teaching-learning process: Discipline, receptivity, teaching skills. Criteria for an effective teaching process, effective communication.

4. Constructivist teaching-learning process: Knowledge construction process, characteristics of a constructivist classroom, constructivist teachers.

5. Teacher professional development: Pre-service and in-service training programs, professional learning community, leadership qualities and group dynamics.

6. Gender perspective on education: Biological, social, and psychological determinants of gender, social psychology of gender roles, educational policies and gender concerns, gender issues in education.

Part C

General Studies

सामान्य हिंदी (**अंक - 5)**

01. स्वर, व्यंजन, वर्तनी
02. लिंग, वचन, काल
03. संज्ञा, सर्वनाम, विशेषण, क्रिया, क्रिया विशेषण, कारक
04. समास रचना एवं प्रकार
05. संधि- स्वर, व्यंजन एवं विसर्ग संधि
06. व्याकरणिक अशुद्धियाँ
07. शब्द रचना उपसर्ग एवं प्रत्यय
08. शब्द प्रकार, तत्सम तदभव, देशज, विदेशी
09. पर्यायवाची, विलोम शब्द, अनेकार्थी शब्द, अनेक शब्दों या वाक्यांश के लिए एक शब्द

General English **(5 Marks)**

1. Number, Gender, Articles
2. Noun, Pronoun, Adjectives, Verb, Adverb
3. Preposition and Conjunctions
4. Synonyms, Antonyms, Homonyms,
5. One word substitution
6. Spellings, Prefixes, Suffixes
7. Proverb and Idioms
8. Active/Passive Voice
9. Sentences (Declarative, Negative, Interrogative, Imperative, Exclamatory)

10. Punctuations

General Mental Ability (05 Marks)

Reasoning, seeing relationships, analogies, numerical ability, spatial relationships, etc.

To test these factors, it will include questions like: spotting odds, numerical series, letter series, seeing relationships between letters, numbers and pictures, symbolic language, hidden pictures, squares and numbers, mathematical operations, matching pictures, various types of cube patterns, etc.

Computer Education (05 Marks)

- **Introduction to Computers:** What is a computer? Uses of computers in daily life (education, banking, healthcare, office work, communication, etc.), Importance and limitations of computers, General characteristics of computers.
- **Major Components of a Computer:** Introduction to hardware and software, CPU (Central Processing Unit), ALU, CU, Memory, Input devices (keyboard, mouse, scanner, touchpad, etc.), Output devices (monitor, printer, speakers, etc.).
- **Types of Printers**: Inkjet printers, LaserJet printers, Dot Matrix printers, Thermal and other modern printers.
- **Operating Systems:** Role of an operating system, MS-DOS, Commercial operating systems (Windows, MacOS, etc.), Open-source operating systems (Linux, Ubuntu, etc.).
- **Microsoft Office for Office Use:** MS Word – Creating, editing, and formatting documents.MS Excel – Tables, formulas, and charts.MS PowerPoint – Slide creation, design, and presentations.

- **Use of the Internet:** Introduction to the Internet, Inbox, Outbox, CC, BCC, Creating and sending emails, Searching online documents, Website browsing, General knowledge of various government department websites.
- **Antivirus and Computer Security:** What is a computer virus? Types of viruses, Damages caused by viruses, Importance of antivirus software, Safety and security measures.
- **Use of Multimedia:** Meaning of multimedia, Use of audio, video, and text, Applications of multimedia.
- **Storage Devices:** Primary and secondary storage, Hard disk, pen drive, CD/DVD, Introduction to cloud storage.
- **Search Engines and Online Platforms:** Google, YouTube, What is a search engine? How to search for required information? Safe and effective searching techniques.

General Knowledge (05 Marks)

78. Major Constitutional Provisions, Fundamental duties and rights under the Indian Constitution, Indian political system and constitutional rights, Right to Information (RTI), Cultural and national personalities, Democracy and elections, Lok Sabha and Rajya Sabha.
79. Indian History and National Movement, Indian civilization and culture, Historical events ,History of Indian independence from 1857 to 1947, Events that occurred after 1947.
80. Geography: Basic geography, Geography of India and the World.
81. Indian Economy: Social and economic development, Population perspective, Gross National Product (GNP) and per capita income, Five-Year Plans, Agriculture and rural development, Industrial development, Indian economy and banking system, Current economic events
82. General Science: Basic concepts related to physics, chemistry, biology, and botany
83. General Knowledge of Chhattisgarh: History of Chhattisgarh, Geography of Chhattisgarh, Political system, Economy, Government schemes, Awards and honors, Traditions, folk songs and music, important personalities, other important topics related to Chhattisgarh.
84. National Education Policy Part 1 School Education (NEP) 2020.

HEAD MASTER - Primary School Total Marks-100

1.

S.NO.	CONTENT	MARKS
1	General Studies & Current Affairs	20
2	Educational Leadership & School Management	20
3	Child Development, FLN & Pedagogy	20
4	Languages: Proficiency in Hindi and English	20
5	ICT in Primary Education	20
	TOTAL	100

General Studies & Current Affairs

- **General Knowledge:** History, geography, culture, and administrative profile of the state.
- **Current Affairs:** Major national and state-level events, sports, and awards.
- **Basic Civics:** Fundamental Rights and Duties, Panchayati Raj System.

2. Educational Leadership & School Management

- **Administrative & Financial Management:** Handling school grants, Cash Book maintenance, scholarships, UDISE+ data entry, and stock registers.
- **School Management Committee (SMC):** Constitutionional, roles and responsibilities of SMC, drafting the School Development Plan (SDP).
- **Policies & Acts:** RTE Act 2009, Child Rights, and NEP 2020 focus areas,RPWD ACT 2016.

3. Child Development, FLN & Pedagogy

- **Foundational Literacy & Numeracy (FLN):** NIPUN Bharat objectives, reading comprehension, and foundational numeracy skills.
- **Child Development (Primary Stage):** Physical, cognitive, and social development of children aged 6–11 years.
- **Activity-Based Learning:** Use of Jaadui Pitara, Toy-Based Pedagogy, and low-cost TLM creation.

- **Assessment & Inclusive Education:** Continuous and Comprehensive Evaluation (CCE), grading, and strategies for Children with Special Needs (CWSN).

4. Languages: Proficiency in Hindi and English

- Number, Gender, Articles, Noun, Pronoun, Adjectives, Verb, Adverb,Conjunctions, Prepositions, Tense,Subject-verb Agreement, Interchangeability of noun and Verb,Sentences, and its kinds,Active Passive voice, Synonyms/Antonyms, One word substitution, Detecting Mis-spelt words, Comprehension passage
- स्वर एवं व्यंजन भेद, संधि एवं प्रकार ,संज्ञा,सर्वनाम, क्रिया, विशेषण,लिंग, वचन, कारक, उपसर्ग एवं प्रत्यय,शब्द प्रकार,तत्सम, तद्भव, देशज एवं विदेशी शब्द,अनेकार्थी शब्द,पर्यायवाची शब्द,विलोम शब्द ,एक शब्द के लिए वाक्यांश, वाक्य रचना, वाक्य शुद्धि (त्रुटि सुधार), वर्तनी शुद्धि , मुहावरे एवं लोकोक्तियाँ, विराम चिह्न, छत्तीसगढ़ी भाषा व साहित्य – जनउला|

5. Information & Communication Technology (ICT) in Primary Education

- Digital Literacy: Basic knowledge of Document (Word, spreadsheet, Presentation), email, and safe internet usage.
- Educational Portals & Apps: Operation of DIKSHA, e-Pathshala, PM eVidya, NISHTHA and state educational portals,VSK Portal and VSK App

Head Master Upper Primary SChool

Total Marks-100

S.NO.	CONTENT	MARKS
1	General Studies & Current Affairs	20
2	Educational Leadership, Management & School Administration	20
3	Child Development, Pedagogy & Assessment	20
4	Subject Content Knowledge	20
5	Information & Communication Technology (ICT) in Education	20
	TOTAL	100

1. General Studies & Current Affairs

- General Knowledge (State-Specific): History, culture, geography, administrative structure, and demographics.

- Current Affairs: Major national and state-level events, sports, and awards.
- Indian Constitution & Public Administration: Fundamental Rights, Directive Principles of State Policy, and Local Self-Government.

2. Educational Leadership, Management & School Administration

- Government Rules & Financial Management: Store Purchase Rules, Service Rules, scholarship schemes, grant and budget management, UDISE+ and SDMIS data management.
- School Leadership: Institutional Planning, School Management Committee (SMC/PTA), and School Development Plan (SDP).
- Departmental Acts & Policies: National Education Policy (NEP 2020), Right to Education Act (RTE 2009), POCSO Act, and child rights protection, PARAKH, NIPUN BHARAT.

3. Child Development, Pedagogy & Assessment

- Child Development (Upper Primary Level): Physical and psychological characteristics of adolescence, learning theories.

- Inclusive Education: Children with Special Needs (CWSN), gender sensitivity, and managing classroom diversity.
- Pedagogy & Evaluation: Competency -Based Teaching/Learning , use of TLM/Jaadui Pitara, Continuous and Comprehensive Evaluation (CCE), Curricular goals and Learning Outcomes.

4. Languages: Proficiency in Hindi and English

- Number, Gender, Articles, Noun, Pronoun, Adjectives, Verb, Adverb,Conjunctions, Prepositions, Gerund, Participle, ,Tense,Subject-verb Agreement, Interchangeability of noun and Verb,Sentences, Sentence structure and its kinds,Active Passive voice,Direct Indirect Narration, Synonyms/Antonyms, One word substitution, Detecting Mis-spelt words, Comprehension passage
- स्वर एवं व्यंजन भेद, संधि-स्वर संधि ,व्यंजन संधि एवं विसर्ग संधि ,संज्ञा, सर्वनाम, क्रिया, विशेषण,लिंग, वचन, कारक, उपसर्ग एवं प्रत्यय,शब्द प्रकार,तत्सम, तद्भव, देशज एवं विदेशी शब्द,अनेकार्थी शब्द,पर्यायवाची शब्द,विलोम शब्द ,एक शब्द के लिए वाक्यांश, समास - समास के प्रकार, वाक्य रचना, वाक्य शुद्धि (त्रुटि सुधार), वर्तनी शुद्धि , मुहावरे एवं लोकोक्तियाँ, विराम चिह्न, छत्तीसगढ़ी भाषा व साहित्य - जनउला, हाना

5. Information & Communication Technology (ICT) in Education

- Digital Literacy: Basic knowledge of Document (Word, spreadsheet, Presentation), email.
- Educational Portals & Apps: Operation of DIKSHA, e-Pathshala, PM eVidya, NISHTHA and state educational portals,VSK Portal and VSK App.
- Cyber Safety: Safe usage of digital platforms and data security.

Assistant Teacher

Total Mark – 100

Content	Mark
Part–A 1. Hindi	10
2. English	15
3. Mathematics	15
4. Environmental Studies	10
Part–B Child Development and Pedagogy	15
Part – C A. General Studies	*35*
Total	**100**

Part – A

Hindi

(Mark 10)

इकाई 1:

वर्ण विचार- स्वर, व्यंजन, अक्षर, वर्तनी, लिंग, वचन, कारक,संधि, काल

इकाई 2:

शब्द विचार- शब्द रूप और शब्द रचना

स्रोत के आधार पर शब्दों के वर्ग- तत्सम, तद्भव, देशज ,विदेशी अर्थ के आधार पर शब्द भेद- मुहावरे, लोकोक्तियां,पर्यायवाची, विलोम, अनेकार्थी

इकाई 3:

शब्द रचना - उपसर्ग, प्रत्यय, समास, अनेक शब्दों या वाक्यांश के लिए एक शब्द

इकाई 4:

पद व पद भेद- संज्ञा एवं उसके प्रकार, कारक चिन्ह, सर्वनाम, विशेषण, क्रिया

इकाई 5 :

वाक्य परिचय- वाक्य के अंग, वाक्य के भेद, पदक्रम

इकाई 6:

रचना- अपठित गद्यांश

इकाई 7:

बच्चों की भाषाई विकास की प्रक्रिया- भाषा विकास के चरण, बच्चे भाषा कैसे सीखते हैं?भाषा सीखने की प्रक्रिया के गुण

इकाई 8:

बच्चों में भाषाई क्षमता एवं उनका विकास -

पठन, अर्थ समझना एवं अर्थ निर्माण, डिकोडिंग, भाषा सुनना, बोलना, पढ़ना, लिखना और उसका अंत:संबंध, वाक्य रचना कौशल

इकाई 9:

समावेशी भाषा कक्षा, बहुभाषिकता

इकाई 10:

मूल्यांकन- भाषा में मूल्यांकन क्यों एवं उसकी प्रकृति ।बच्चों में भाषा क्षमता के आकलन के संभावित तरीके, भाषा सीखने, लिखने व पढ़ने की प्रक्रिया में गलतियो की भूमिका ।

English

(Mark 15)

Unit 1: Comprehension

- Unseen prose passages with higher order thinking questions on comprehension, grammar and verbal ability.
- Comprehension
- Grammar
- Vocabulary

Unit 2: Pedagogy of language development

- Language acquisition in the classroom.
- Principles of language teaching
- Role of listening and speaking before reading and writing.
- Phonics and phonemic awareness.
- Function of language and how children use it as a tool.
- Critical perspective on the role of grammar in learning a language for communicating ideas verbally and in written form.
- Challenges of teaching language in a diverse classroom, language difficulties, errors and disorders.
- Language skills
- Evaluating language comprehension and proficiency: speaking, listening, reading and writing.
- Making as well as Use of low-cost Teaching learning materials
- Textbook- unit themes and learning objectives
- Emphasis on holistic play-based pedagogy.
- Safe and appropriate use of digital content*
- Multimedia materials, multilingual resource of the classroom
- Assessment
- Remedial teaching: Individual differences and learner needs,

Mathematics

(Mark 15)

Unit 1: Introduction

Contribution of ancient Indian mathematicians and their work

Unit 2: Nature of Mathematics

- Nature of mathematics, mathematical thinking, abstraction, specialization, and generalization
- Relationship with other subjects

Unit 3: Learning and Assessment of Mathematics

- Learning through ancient Indian mathematical methods
- Constructivist assessment in the classroom, conceptual and procedural knowledge

Unit 4: Mathematics Topics

- 4.1 Decimal system
- 4.2 Numbers - whole, even-odd, prime and composite, triangular-number, Karaka number
- 4.3 Fractions - comparison of fractions, rules, converting decimal fractions to simple fractions
- 4.4 Simplification of expressions, use of BODMAS
- 4.5 Square roots - different methods of finding square roots
- 4.6 HCF and LCM - formulas for solving related problems
- 4.7 Questions based on mean, median, and mode
- 4.8 Percentage - questions based on percentage, interest, profit, and loss
- 4.9 Ratio, proportion, and unitary method
- 4.10 Speed, time, and distance
- 4.11 Area, perimeter, and volume
- 4.12 Patterns - identifying patterns, finding similarities between problems and solutions
- 4.13 Geometric figures - identification, understanding, and construction of geometric figures
- 4.14 Specifying location using coordinate geometry

Environmental Studies

(Mark 10)

Unit 1: Understanding Environment

Components of environment (Social, economic, natural, cultural), Interaction among environmental components, Major environmental concerns, Fascinating aspects of environment

Unit 2: Children's Understanding of Environment

Children's perspective, Experience-based understanding, Collection, analysis, and observation of environmental information, Problem-solving

Unit 3: Why Teach Environmental Studies

Curriculum concerns, Concept formation, Concept of social studies

Unit 4: Pedagogy of Environmental Studies

Teaching science, Teaching social studies, Reading and understanding children's drawings, Understanding day-night and seasons, Measuring time, Reading and understanding maps, Child-centered teaching, integrated approach

Unit 5: Environmental Studies and Classroom Activities

Organizing and conducting classroom activities, Experiments, Collecting experimental materials ,Surveys, Projects.Field trips, Library, Evaluation and assessment

Unit 6: Family Relationships

Types of families, Social events , Social evils, bad habits, Its social and economic consequences, Social participation

Unit 7: Health and Safety

Personal hygiene, Basic knowledge of internal body organs, Balanced diet Common diseases, causes, and prevention, Vaccination, First aid, Public health, Safety rules and laws

Unit 8: Ecosystem, Environmental Conservation, and Management

Ecosystem structure, Food chain, Food web, Cycle of substances, Basic ideas of sustainable development, Citizen's role in environmental conservation

Unit 9: Culture and Traditions

Local festivals, Culture of Chhattisgarh, Traditional customs and practices

Part – B

Child Development and Pedagogy

(Mark 15)

Unit 1: Child Development

Concept of development and its relation to learning, Theories of child development, Influence of heredity and environment, Critical perspective on creation of intelligence, Multidimensional intelligence, differences in understanding based on language and thought, individual differences among learners, linguistic differences, caste, gender, community, religion, etc. Difference between assessment for learning and assessment of learning, school based assessment and continuous and comprehensive evaluation, perspectives and practices.

Unit 2: Concept of Inclusive Education and Understanding Children with Special Needs

Education of diverse backgrounds, including disadvantaged and vulnerable ones.

Education of difficulties in learning, disabilities, related children.

Education of Creative and exceptionally talented children.

Unit 3: Learning and Pedagogy

Basic methods of teaching and learning, strategies for children's learning, learning as a social activity, social perspective of learning. The child as a problem solver and scientific researcher. Cognition and emotion, motivation and learning, factors contributing to learning, personal and environmental. Reasoning, identifying relationships, analogies, numerical ability, spatial (visual) relations, etc.

Part – C

General Studies.

(A) General Mental Ability ***(Marks 15)***

To assess these factors, questions of the following types are generally asked: identifying odd one out, number series, letter series, establishing relationships through letters, numbers, and figures, coded language, hidden figures, squares and

numbers, mathematical operations, matching figures, various types of cube-related patterns, and soon.

(B) Computer Education ***(Marks 05)***

- **Introduction to Computers:** What is a computer, Uses of computers in daily life (education, banking, healthcare, office work, communication, etc.), Importance and limitations of computers, General characteristics of computers.
- **Major Components of a Computer:** Introduction to hardware and software, CPU (Central Processing Unit), ALU, CU, Memory, Input devices (keyboard, mouse, scanner, touchpad, etc.), Output devices (monitor, printer, speakers, etc.).
- **Types of Printers**: Inkjet printers, LaserJet printers, Dot Matrix printers, Thermal and other modern printers.
- **Operating Systems:** Role of an operating system, MS-DOS, Commercial operating systems (Windows, macros, etc.), Open-source operating systems (Linux, Ubuntu, etc.).
- **Microsoft Office for Office Use:** MS Word – Creating, editing, and formatting documents.MS Excel – Tables, formulas, and charts.MS PowerPoint – Slide creation, design, and presentations.
- **Use of the Internet:** Introduction to the Internet, Inbox, Outbox, CC, BCC, Creating and sending emails, Searching online documents, Website browsing, General knowledge of various government department websites.
- **Antivirus and Computer Security:** What is a computer virus?

- Types of viruses, Damages caused by viruses, Importance of antivirus software, Safety and security measures.
- **Use of Multimedia:** Meaning of multimedia, Use of audio, video, and text, Applications of multimedia.
- **Storage Devices:** Primary and secondary storage, Hard disk, pen drive, CD/DVD, Introduction to cloud storage.
- **Search Engines and Online Platforms:** Google, YouTube,
- What is a search engine? How to search for required information? Safe and effective searching techniques.

(C) General Knowledge ***(Marks: 15)***

- **Major Constitutional** - Provisions, Fundamental duties and rights under the Indian Constitution, Indian political system and constitutional rights, Right to Information (RTI), Cultural and national personalities, Democracy and elections, Lok Sabha and Rajya Sabha
- **Indian History and National Movement-** Indian civilization and culture, Historical events (up to the Class 10 level of the Chhattisgarh Board), History of Indian independence from 1857 to 1947, Events that occurred after 1947.
- **Geography -** Basic geography up to Class 10 level of the Chhattisgarh Board, Geography of India and the World.
- **Indian Economy** - Social and economic development, Population perspective, Gross National Product (GNP) and per capita income, Five-Year Plans, Agriculture and rural development, Industrial development, Indian economy and banking system, Current economic events (as per Class 10 level of the Chhattisgarh Board).

- **General Science -** Basic concepts related to physics, chemistry, biology, and botany (up to Class 10 level of the Chhattisgarh Board).
- **General Knowledge of Chhattisgarh -** History of Chhattisgarh, Geography of Chhattisgarh, Political system, Economy, Government schemes, Awards and honors, Traditions, folk songs and music, important personalities, other important topics related to Chhattisgarh.
- **National Education Policy (NEP) 2020 – (Part 1 – School Education)**

शिक्षक पद हेतु पाठ्यक्रम (अंक योजना)

विषय - हिंदी

विषय-वस्तु	अंक
भाग - अ 1. हिंदी साहित्य का इतिहास	10 अंक
2. गद्य खंड	05 अंक
3. पद्य खंड	05 अंक
4. हिंदी भाषा का व्यावहारिक व्याकरण	15 अंक
5. हिंदी भाषा शिक्षण	10 अंक
6. छत्तीसगढ़ी भाषा व साहित्य	05 अंक
भाग - ब बाल विकास एवं शिक्षा शास्त्र	15 अंक
भाग – स सामान्य अध्ययन	35 अंक
योग -	100 अंक

इकाई 1. हिंदी साहित्य का इतिहास

प्रमुख काल विभाजन
हिंदी साहित्य का प्रमुख काल एवं प्रवृत्तियाँ (आदिकाल, भक्तिकाल, रीतिकाल, आधुनिक काल)

इकाई 2. गद्य खंड

गद्य साहित्य की विधाएँ

कहानी, नाटक / एकांकी, निबंध, रेखाचित्र, संस्मरण, जीवनी ,आत्मकथा, यात्रा वृतांत, लघुकथा, व्यंग्य

इकाई 3. पद्य खंड

आदिकालीन कवि एवं उनकी रचनाएँ

भक्ति काल (सगुण, निर्गुण, सूफी काव्य)

रीतिकाल की कविता

आधुनिक काल के कवि एवं उनकी रचनाएँ

(भारतेंदु युग, द्विवेदी युग, छायावाद, प्रगतिवाद)

इकाई 4. हिंदी भाषा का व्यावहारिक व्याकरण

वर्ण विचार (उच्चारण, वर्तनी)

स्वर, व्यंजन, अक्षर, वर्तनी, लिंग, वचन, काल, वाक्य, संधि और संधि के प्रकार, संधि-विच्छेद।

- **शब्द विचार**
    - शब्द रूप और शब्द रचना,
    - स्त्रोत के आधार पर शब्दों के वर्ग तत्सम, तद्भव, देशज, विदेशी।
    - अर्थ के आधार पर शब्द भेद पर्यायवाची शब्द, विलोम शब्द, अनेकार्थी शब्द, श्रुतिसम भिन्नार्थक शब्द, शब्द-युग्म शब्द रचना- उपसर्ग, प्रत्यय, समास और उसके भेद,
    - अनेक शब्दों या वाक्यांश के लिए एक शब्द; शब्द-शक्ति।

- **पद व पद - भेद**

  संज्ञा, संज्ञा के प्रकार, सर्वनाम, विशेषण, क्रिया, कारक चिह्न।

अलंकार - शब्दालंकार, अर्थालंकार, (अनुप्रास, यमक, श्लेष, उपमा, रूपक,उत्प्रेक्षा, मानवीकरण, अतिशयोक्ति अलंकार)

शब्द शक्तियाँ

- **वाक्य परिचय**

  वाक्य के अंग, एवं वाक्य भेद।

- **विराम चिह्न- प्रमुख प्रकार।**
- **रचना, मुहावरे तथा लोकोक्तियाँ।**
- **अपठित गद्यांश**

इकाई 5. हिंदी भाषा शिक्षण

भाषायी दक्षताएँ -

सुनना, बोलना, पढ़ना और लिखना।

इकाई 6. छत्तीसगढ़ी भाषा व साहित्य

बाल विकास एवं शिक्षा शास्त्र

इकाई 1 : बच्चे का विकास (उच्च प्राथमिक शाला बालक)

विकास की अवधारणा एवं उसका सीखने से संबंध, बच्चों के विकास के सिद्धान्त, वंशानुक्रम एवं वातावरण का प्रभाव, बुद्धिमत्ता के सृजन का समालोचनात्मक परिप्रेक्ष्य, बहु आयामी बुद्धि, भाषा एवं

विचार, सीखने वालों के मध्य वैयक्तिक विभिन्नता, भाषायी विभिन्नता, जाति, लिंग, समुदाय, धर्म, इत्यादि पर आधारित समझने में अन्तर, सीखने हेतु मूल्याँकन व सीखने का मूल्याँकन के मध्य अन्तर, शाला आधारित मूल्याँकन एवं सतत् व समग्र मूल्याँकन, परिप्रेक्ष्य एवं अभ्यास।

इकाई 2 :समावेशी शिक्षा की अवधारणा तथा विशिष्ट आवश्यकता वाले बच्चों को समझना

वंचित व कमजोर सहित विभिन्न पृष्ठभूमि से आए सीखने वाले का शिक्षण।

सीखने में कठिनाई, विकलांगता आदि से संबंधित बच्चों का शिक्षण ।

सृजनात्मक एवं विशिष्ट योग्यता वाले, सीखने वालों का शिक्षण।

इकाई 3: सीखना एवं शिक्षाशास्त्र

सीखने-सिखाने के आधारभूत तरीके, बच्चों के सीखने की व्यूह रचना, सामाजिक क्रियाकलाप के रूप में सीखना, सीखने का सामाजिक परिप्रेक्ष्य। बालक, समस्या समाधान करने वाला व वैज्ञानिक अनुसंधान करने वाले के रूप में। संज्ञान एवं संवेग, अभिप्रेरणा व सीखना, सीखने में सहयोगी कारक वैयक्तिक एवं पर्यावरणीय

सामान्य अध्ययन

सामान्य हिन्दी

(अंक - 5)

1. स्वर, व्यंजन, वर्तनी
2. लिंग, वचन, काल
3. संज्ञा, सर्वनाम, विशेषण, क्रिया, क्रिया विशेषण, कारक
4. समास रचना एवं प्रकार
5. संधि- स्वर, व्यंजन एवं विसर्ग संधि
6. रस व अलंकार, दोहा, छंद, सोरठा
7. व्याकरणिक अशुद्धियाँ

8. शब्द रचना उपसर्ग एवं प्रत्यय

9. शब्द प्रकार, तत्सम तदभव, देशज, विदेशी

10. पर्यायवाची, विलोमार्थी, अनेकार्थी शब्द, अनेक शब्दों या वाक्यांश के लिए एक शब्द

11. मुहावरे व लोकोक्तियां

सामान्य अंग्रेजी **(अंक -5)**

UNIT-1 ENGLISH GRAMMAR-

1. Number, Gender, Articles
2. Pronoun, Adjectives, Verb, Adverb
3. Use of some important Conjunctions
4. Use of some important preposition

UNIT-2 TRANSFORMATION OF SENTENCES

1. Active/Passive Voice
2. Direct/Indirect Narration

UNIT-3 VOCABULARY

1. Synonyms/Antonyms
2. One word substitution
3. Spellings
4. Proverb, Idioms and phrases

सामान्य मानसिक योग्यता **(अंक - 10)**

तर्क करना, संबंध देखना, एनालॉजी, आंकिक योग्यता, आकाशीय संबंध आदि।

इन कारकों का परीक्षण करने के लिए सामान्यतः इस प्रकार के प्रश्न पूछे जाते हैं- विषमता को पहचानना, आंकिक श्रेणी, अक्षर क्षेणी, अक्षर, अंक और चित्रों द्वारा संबंध देखना, सांकेतिक भाषा, छुपे हुए चित्र, वर्ग एवं अंक, गणितीय संक्रियाएँ, चित्रों का मिलान, घन संबंधी विभिन्न प्रकार के पैटर्न आदि-आदि।

कम्प्यूटर शिक्षा – **(अंक -5)**

- कम्प्यूटर का परिचय : कम्प्यूटर क्या है?, दैनिक जीवन में कम्प्यूटर का उपयोग,(शिक्षा, बैंकिंग, स्वास्थ्य, कार्यालय, संचार आदि), कम्प्यूटर का महत्व और सीमाएँ, कम्प्यूटर की सामान्य विशेषताएँ।
- कम्प्यूटर के प्रमुख भाग: हार्डवेयर एवं सॉफ्टवेयर का परिचय,सी.पी.यू. (CPU),ALU, CU, Memory, इनपुट डिवाइस (कीबोर्ड, माउस, स्कैनर, टचपैड आदि), आउटपुट डिवाइस (मॉनिटर, प्रिंटर, स्पीकर आदि)।
- प्रिंटर के प्रकार : इंकजेट प्रिंटर,लेज़रजेट प्रिंटर,डॉट मैट्रिक्स प्रिंटर,थर्मल एवं अन्य आधुनिक प्रिंटर।
- ऑपरेटिंग सिस्टम : ऑपरेटिंग सिस्टम की भूमिका, एम.एस. डॉस (MS-DOS), कमर्शियल ऑपरेटिंग सिस्टम (Windows, macOS आदि), ओपन सोर्स ऑपरेटिंग सिस्टम (Linux, Ubuntu आदि)।
- कार्यालयीन उपयोग हेतु Microsoft Office : MS Word - डॉक्यूमेंट बनाना, संपादन, फॉर्मेटिंग। MS Excel - टेबल, फार्मूले, चार्ट। MS PowerPoint - स्लाइड निर्माण, डिज़ाइन, प्रस्तुतीकरण।
- इंटरनेट का उपयोग : इंटरनेट का परिचय, Inbox, Outbox, CC, BCC, ई-मेल बनाना व भेजना, ऑनलाइन डॉक्यूमेंट खोज, वेबसाइट सर्फिंग, विभिन्न सरकारी विभागों की वेबसाइटों की सामान्य जानकारी।
- एंटीवायरस एवं कम्प्यूटर सुरक्षा : कम्प्यूटर वायरस क्या है?, वायरस के प्रकार, वायरस से होने वाले नुकसान, एंटीवायरस सॉफ्टवेयर का महत्व ,सुरक्षा उपाय।
- मल्टीमीडिया का उपयोग : मल्टीमीडिया का अर्थ, ऑडियो, वीडियो और टेक्स्ट का उपयोग, मल्टीमीडिया अनुप्रयोग।
- स्टोरेज डिवाइस : प्राथमिक व द्वितीयक स्टोरेज, हार्ड डिस्क, पेन ड्राइव, सीडी/डीवीडी, क्लाउड स्टोरेज का परिचय।
- सर्च इंजिन एवं ऑनलाइन प्लेटफॉर्म - गूगल, यूट्यूब, सर्च इंजिन क्या है?, वांछित जानकारी कैसे खोजें?, सुरक्षित एवं प्रभावी सर्चिंग तकनीकें।

सामान्य ज्ञान (अंक -10)

1. मुख्य संवैधानिक प्रावधान, मौलिक कर्तव्य एवं भारतीय राजनैतिक व्यवस्था एवं संविधान अधिकार, सूचना का अधिकार, सांस्कृतिक, राष्ट्रीय व्यक्तित्व, लोकतंत्र एवं चुनाव लोकसभा, राज्यसभा।

2. भारतीय इतिहास एवं राष्ट्रीय आंदोलन भारतीय सभ्यता एवं सांस्कृतिक, ऐतिहासिक घटनाएं, भारतीय स्वतंत्रता का इतिहास 1857 से 1947 तथा, 1947 के बाद का घटनाक्रम।

3. भूगोल : छ.ग. बोर्ड के कक्षा 10 वीं तक के स्तर तक सामान्य भूगोल, भारत एवं विश्व का भूगोल।

4. भारतीय अर्थव्यवस्था: सामाजिक एवं आर्थिक विकास, जनसंख्या परिप्रेक्ष्य, सकल राष्ट्रीय उत्पादन और प्रति व्यक्ति आय, पंचवर्षीय योजनाएं, कृषि व ग्रामीण विकास, औद्योगिक विकास, भारतीय अर्थव्यवस्था, बैंक प्रणाली, वर्तमान आर्थिक घटनाक्रम

5. सामान्य विज्ञान : छ.ग. बोर्ड के कक्षा 10वीं तक के स्तर तक भौतिकी, रसायनशास्त्र एवं जीव तथा वनस्पति विज्ञान से संबंधित मूलभूत जानकारी।

6. छत्तीसगढ़ की सामान्य जानकारी : छत्तीसगढ़ का इतिहास, भूगोल, राजनैतिक व्यवस्था, अर्थव्यवस्था शासकीय योजनाएं, पुरस्कार-सम्मान, परम्परायें लोकगीत-संगीत, महत्वपूर्ण व्यक्तिव एवं छत्तीसगढ़ से संबंधित अन्य महत्वपूर्ण विषय।

7. नई शिक्षा नीति 2020।

Teacher – English

TOTAL MARKS - 100

Subject Matter	Marks
Part - A **11. Grammar based questions** **12. Vocabulary based questions** **13. Questions based on reading comprehension** **14. Pedagogy of Language Development**	**50**
Part - B **Educational Psychology, Assessment and Evaluation in Education, Pedagogy, Teaching Aptitude**	**15**
Part – C **General Studies & Language**	**35**
Total -	**100**

Part - A

1. Grammar based questions **(Marks-15)**

   a. Determiners
   b. Modals
   c. Question tag
   d. Finite and Non-finite verbs, Phrasal Verbs
   e. Agreement (Between subject and verbs)
   f. Tenses (Kinds and transformation)
   g. Identifying clauses (Relative clause – Defining and Non defining, Adverb clause, Noun clause, Non-finite clause)

h. Transformation of Sentences (Simple, Compound, Complex)
i. Speech (Direct and Indirect)
j. Sentence Structure: Employing inversion and cleft sentences
k. Conditional Sentences
l. Elliptical sentence pattern

2. Vocabulary based questions **(Marks-15)**

a. Word formation: Root words and Affixes

b. Polysemy, Homophones
c. Collocations
d. Word Class (conversion of words from one grammatical category to another)
e. Lexical Bundles
f. Idiomaticity & Opacity
g. Figure of Speech

3. Questions based on reading comprehension **(Marks-10)**

- Two or three unseen passages from different genres prose, poetry, drama, articles, editorials, scientific, and literary extracts. Questions will test comprehension, inference, vocabulary, tone, rhetorical devices, and logical sequencing

4. Pedagogy of Language Development. **(Marks-10)**

- Language Learning and acquisition
- Linguistic System Of Languages
- Language Skills
- Role of listening and speaking in language learning and function of language.
- Methods of Teaching Second Language with reference to English Language Teaching.

- Challenges of teaching language in a diverse classroom; linguistic difficulties in language learning and performance errors.
- Teaching learning materials: Textbook, multi-media materials, multilingual resource of the classroom.
- Remedial Teaching in context of Language Teaching.

Part B:

Child Development, Pedagogy (15 Marks)

Unit 1: Child Development (Upper Primary School Children)

Concept of development and its relation to learning, Theories of child development, Influence of heredity and environment, Critical perspective on creation of intelligence, Multidimensional intelligence, differences in understanding based on language and thought, individual differences among learners, linguistic differences, caste, gender, community, religion, etc. Difference between assessment for learning and assessment of learning, school based assessment and continuous and comprehensive evaluation, perspectives and practices.

Unit 2: Concept of Inclusive Education and Understanding Children with Special Needs

Education of diverse backgrounds, including disadvantaged and vulnerable ones.

Education of difficulties in learning, disabilities, related children.

Education of Creative and exceptionally talented children.

Unit 3: Learning and Pedagogy

Basic methods of teaching and learning, strategies for children's learning, learning as a social activity, social perspective of learning. The child as a problem solver and scientific researcher. Cognition and emotion, motivation and learning, factors contributing to learning, personal and environmental.

Part C

General Studies & General Hindi/English (35 Marks)

सामान्य हिंदी (**अंक - 5)**

01. स्वर, व्यंजन, वर्तनी
02. लिंग, वचन, काल
03. संज्ञा, सर्वनाम, विशेषण, क्रिया, क्रिया विशेषण, कारक
04. समास रचना एवं प्रकार
05. संधि- स्वर, व्यंजन एवं विसर्ग संधि
06. व्याकरणिक अशुद्धियाँ
07. शब्द रचना उपसर्ग एवं प्रत्यय
08. शब्द प्रकार, तत्सम तदभव, देशज, विदेशी
09. पर्यायवाची, विलोम शब्द, अनेकार्थी शब्द, अनेक शब्दों या वाक्यांश के लिए एक शब्द

General English (5 Marks)

1. Number, Gender, Articles
2. Noun, Pronoun, Adjectives, Verb, Adverb
3. Preposition and Conjunctions
4. Synonyms, Antonyms, Homonyms,
5. One word substitution
6. Spellings, Prefixes, Suffixes

7. Proverb and Idioms

8. Active/Passive Voice

9. Sentences (Declarative, Negative, Interrogative, Imperative, Exclamatory)

10. Punctuations

General Mental Ability (10 Marks)

Reasoning, seeing relationships, analogies, numerical ability, spatial relationships, etc.

To test these factors, it will include questions like: spotting odds, numerical series, letter series, seeing relationships between letters, numbers and pictures, symbolic language, hidden pictures, squares and numbers, mathematical operations, matching pictures, various types of cube patterns, etc.

Computer Education (5 Marks)

- Introduction to Computers: What is a computer? Uses of computers in daily life (education, banking, healthcare, office work, communication, etc.), Importance and limitations of computers, General characteristics of computers.
- Major Components of a Computer: Introduction to hardware and software, CPU (Central Processing Unit), ALU, CU, Memory, Input devices (keyboard, mouse, scanner, touchpad, etc.), Output devices (monitor, printer, speakers, etc.).
- Types of Printers: Inkjet printers, LaserJet printers, Dot Matrix printers, Thermal and other modern printers.
- Operating Systems: Role of an operating system, MS-DOS, Commercial operating systems (Windows, macOS, etc.), Open-source operating systems (Linux, Ubuntu, etc.).

- Microsoft Office for Office Use: MS Word – Creating, editing, and formatting documents.MS Excel – Tables, formulas, and charts.MS PowerPoint – Slide creation, design, and presentations.
- Use of the Internet: Introduction to the Internet, Inbox, Outbox, CC, BCC, Creating and sending emails, Searching online documents, Website browsing, General knowledge of various government department websites.
- Antivirus and Computer Security: What is a computer virus? Types of viruses, Damages caused by viruses, Importance of antivirus software, Safety and security measures.
- Use of Multimedia: Meaning of multimedia, Use of audio, video, and text, Applications of multimedia.
- Storage Devices: Primary and secondary storage, Hard disk, pen drive, CD/DVD, Introduction to cloud storage.
- Search Engines and Online Platforms: Google, YouTube,What is a search engine? How to search for required information? Safe and effective searching techniques.

General Knowledge (10 Marks)

85. Major Constitutional Provisions, Fundamental duties and rights under the Indian Constitution, Indian political system and constitutional rights, Right to Information (RTI), Cultural and national personalities, Democracy and elections, Lok Sabha and Rajya Sabha.
86. Indian History and National Movement, Indian civilization and culture, Historical events ,History of Indian independence from 1857 to 1947, Events that occurred after 1947.
87. Geography: Basic geography, Geography of India and the World.
88. Indian Economy: Social and economic development, Population perspective, Gross National Product (GNP) and per capita income, Five-Year Plans, Agriculture and rural development, Industrial development, Indian economy and banking system, Current economic events
89. General Science: Basic concepts related to physics, chemistry, biology, and botany
90. General Knowledge of Chhattisgarh: History of Chhattisgarh, Geography of Chhattisgarh, Political system, Economy, Government schemes, Awards and

honors, Traditions, folk songs and music, important personalities, other important topics related to Chhattisgarh.

91. National Education Policy (NEP) 2020.

Teacher - Social Science Arts

(Total Marks-100)

Content	Marks
Part A 1. Geography	15
2. History	15
3. Civics	10
4. Economics	10
Part B Child Development and Pedagogy	15
Part C Language Proficiency and General Study	35
Total	**100**

Part A **(Marks-15)**

1. Geography

Major components of the Earth: Location of places on Earth (relating to maps) , Earth 's internal structure

Oceans and continents , lithosphere , hydrosphere , biosphere , climate.

Transformative forces on the Earth's surface (earthquakes and volcanoes , rivers , groundwater , glaciers , wind , ocean waves) ,

Study of India: Physiographic regions (mountains , plateaus , plains), natural and human resources , natural vegetation and wildlife , human environment , soil water.

2. History **(Marks-15)**

Indian Civilization and Culture: Time calculation and sources in Indian history , Vedic culture and other philosophies (Jain and Buddhist philosophies) , Indus Valley Civilization , Arts and Crafts , Mauryan period ,

Gupta Empire , Mughal Empire and British Rule: Mughal-Rajput relations , administration during the Mughal period , social , economic and cultural conditions , British rule policy towards Indian states , 1857 revolution and its effects ,

History of Chhattisgarh: Naming of Chhattisgarh , Education , Literature , Art , Industry , Development of Press , Freedom Struggle in Chhattisgarh , Major Tribal Rebellions , Major Dynasties of Chhattisgarh ,

3. Civics **(Marks-10)**

Indian Constitution: Formation, Special Conditions, Fundamental Rights and Duties, Constitutional position and powers of the President and Governors, Indian National movement.

Indian Governance: Democracy , Electoral Process , Parliament , Lok Sabha , Rajya Sabha , Prime Minister and Cabinet , Foreign Policy , Legislature , Executive , Judiciary .

(Municipal Corporation , Municipality , Panchayati Raj System) , United Nations ,

globalization International organizations, Indian society: special features , family and community , status , importance and contribution of women.

4. Economics (Marks-10)

Economic Activities: Economic and non-economic activities, importance of work, industry, agriculture, taxes and budget.

General Awareness: Right to Information , Road Safety , Trans Gender.

Exchange and Market

Part B:

Child Development, Pedagogy (15 Marks)

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Part C

General Studies & General Hindi/English (35 Marks)

सामान्य हिंदी (**अंक - 5)**

01. स्वर, व्यंजन, वर्तनी
02. लिंग, वचन, काल
03. संज्ञा, सर्वनाम, विशेषण, क्रिया, क्रिया विशेषण, कारक
04. समास रचना एवं प्रकार
05. संधि- स्वर, व्यंजन एवं विसर्ग संधि
06. व्याकरणिक अशुद्धियाँ
07. शब्द रचना उपसर्ग एवं प्रत्यय
08. शब्द प्रकार, तत्सम तदभव, देशज, विदेशी
09. पर्यायवाची, विलोम शब्द, अनेकार्थी शब्द, अनेक शब्दों या वाक्यांश के लिए एक शब्द

General English (5 Marks)

1. Number, Gender, Articles
2. Noun, Pronoun, Adjectives, Verb, Adverb

3. Preposition and Conjunctions

4. Synonyms, Antonyms, Homonyms,

5. One word substitution

6. Spellings, Prefixes, Suffixes

7. Proverb and Idioms

8. Active/Passive Voice

9. Sentences (Declarative, Negative, Interrogative, Imperative, Exclamatory)

10. Punctuations

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General Knowledge (10 Marks)

1. Major Constitutional Provisions, Fundamental duties and rights under the Indian Constitution, Indian political system and constitutional rights, Right to Information (RTI), Cultural and national personalities, Democracy and elections, Lok Sabha and Rajya Sabha.
2. Indian History and National Movement, Indian civilization and culture, Historical events ,History of Indian independence from 1857 to 1947, Events that occurred after 1947.
3. Geography: Basic geography, Geography of India and the World.
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5. General Science: Basic concepts related to physics, chemistry, biology, and botany
6. General Knowledge of Chhattisgarh: History of Chhattisgarh, Geography of Chhattisgarh, Political system, Economy, Government schemes, Awards and honors, Traditions, folk songs and music, important personalities, other important topics related to Chhattisgarh.
7. National Education Policy (NEP) 2020.

Teacher - Science

Total Marks-100

Content	Marks
Part A 5. Biology	20
6. Chemistry	15
7. Physics	15
Part B Child Development and Pedagogy	15
Part C Language Proficiency and General Study	35
Total	**100**

Biology Marks-20

Tissues, Organs, Organ System, Organism:

Structure and functions of animal and plant tissues (only four types of tissues in animals, Meristematic and Permanent tissues in plants).

Life processes:

'Living Being'. Basic concept of nutrition, respiration, transport and excretion in plants and animals.

Control and co-ordination in animals and plants:

Tropic movements in plants; Introduction of plant hormones; Control and co-ordination in animals: Nervous system; Voluntary, involuntary and reflex action Chemical co-ordination, animal hormones.

Reproduction:

Reproduction in animals and plants (asexual and sexual) reproductive health - need and methods of family planning. Safe sex vs HIV/AIDS. Child bearing and women's health.

Heredity and Evolution:

Heredity; Mendel's contribution-Laws for inheritance of traits: Sex determination: brief introduction evolution. - Acquired and inherited traits, Homologous and Analogous organs. What are fossils?

Cell-Basic Unit of life:

Cell as a basic unit of life; prokaryotic and eukaryotic cells, multi cellular organisms; cell membrane and cell wall, cell organelles and cell inclusions; chloroplast, mitochondria, vacuoles, endoplasmic reticulum, Golgi apparatus; nucleus, chromosomes basic structure, number.

Food Production

Plant and animal breeding and selection for quality improvement and management; Use of fertilizers and manures; Protection from pests and diseases; Organic farming.

Our environment:

Eco-system, Environmental problems, Ozone depletion, waste production and their solutions.

Biodegradable and non-biodegradable substances.

Global warming and greenhouse effect, acid rain, particulate pollutants, smog, formation of photochemical smog.

Water pollution-oxygen demand, chemical oxygen demand, international standard of drinking water, processing of drinking water.

Diversity of living organisms

- Basis of Classification
- Classification & Evolution.
- Hierarchy of classification-groups.
- Plants, Animals.
- Nomenclature

Why do we fall ill

- Health & its failure.
- Diseases and their causes
- Types of diseases- Infectious, Noninfectious
- Prevention of diseases
- Immunization

Chemistry Marks-15

Matter-Nature and Behavior

Gases, liquids, solids, plasma and Bose-Einstein condensate, types of intermolecular forces. Classification of matter into mixtures and pure substances. Henry's Law. Concentration of solutions. Colloids-phases of colloids, Tyndall effect, Brownian movement. Suspension.

Properties of matter. Measurement of properties of matter-S.I. system of units, physical and chemical changes Laws of chemical combination

Gay Lussac's law, Avogadro law, atomic and molecular masses, average atomic mass, mole concept and molar masses, percentage composition.

Nature of matter: Elements, compounds and mixtures. Heterogeneous and homogenous mixtures, colloids and suspensions. Physical and chemical changes (excluding separating the components of a mixture).

Particle nature and their basic units:

Atoms and molecules, Law of Chemical Combination, Chemical formula of common compounds, Atomic and molecular masses.

Structure of atoms:

Electrons, protons and neutrons, valency, Atomic Number and Mass Number, Isotopes and Isobars, Discharge tube experiments.

Chemical reactions:

Chemical equation, balanced chemical equation, implications of a balanced chemical equation, types of chemical reactions: combination, decomposition, displacement, double displacement, precipitation, endothermic exothermic reactions, oxidation and reduction.

Acids, bases and salts:

Their definitions in terms of furnishing of H+ and OH- ions, General properties examples and uses, neutralization, concept of pH scale numericals, Importance of pH in everyday life; preparation and uses of Sodium Hydroxide, Bleaching powder, Baking soda, Washing soda and Plaster of Paris.

Metals and Non metals:

Properties of metals and non-metals; Reactivity series; Formation and properties of ionic compounds: Basic metallurgical processes; Corrosion and its prevention.

Carbon compounds:

Covalent bonding in carbon compounds. Versatile nature of carbon. Homologous series. difference between saturated hydro carbons and unsaturated hydrocarbons. Chemical properties of carbon compounds Alcohols: Preparation and properties. Qualitative analysis of alcohols, iodoform test, effect of alcohols on living beings.

Carboxylic acids: Preparation and properties.

, soaps and detergents. Concept of hybridization and shapes of molecules structural formula and molecular models. isomerism, IUPAC nomenclature of organic compounds.

Periodic Classification of Elements

Mendeleev's periodic law, Periodic properties of elements, trends in the periods and groups: Importance of the periodic table, position of hydrogen in the periodic table.

Physics Marks-15

Motion:

Distance and displacement, velocity, uniform and non-uniform motion along a straight line; acceleration, distance-time and velocity-time graphs for uniform motion and uniformly accelerated motion, elementary idea of uniform circular motion.

Force and Newton's laws:

Force and Motion, Newton's Laws of Motion, Action and Reaction forces, Inertia of a body, Inertia and mass, Momentum, Force and Acceleration.

Gravitation:

Gravitation; Universal Law of Gravitation, Force of Gravitation of the earth (gravity), Acceleration due to Gravity; Mass and Weight; Freefall.

Floatation:

Thrust and Pressure. Archimedes' Principle; Buoyancy.

Work, Energy and Power: Work done by a Force, Energy, power : Kinetic and Potential energy; Law of conservation of energy.

Sound:

Nature of sound and its propagation in various media, speed of sound, range of hearing in humans; ultra sound; reflection of sound; echo.

Effects of Current

Electric current, potential difference and electric current. Ohm's law; Resistance, Resistivity.

Factors on which the resistance of a conductor depends. Series combination of resistors, parallel combination of resistors and its applications in daily life. Heating effect of electric current and its applications in daily life. Electric power, Interrelation between P, V, I and R.

Magnetic effects of current Magnetic field, field lines, field due to a current carrying conductor, field due to current carrying coil or solenoid; Force on current carrying conductor, Fleming's Left Hand Rule, Electric Motor, Electromagnetic induction. Induced potential difference, Induced current. Fleming's Right Hand Rule, Electric Generator, Direct current. Alternating current: frequency of AC. Advantage of AC over DC. Domestic electric circuits.

Natural Phenomena

Reflection of light by curved surfaces; Images formed by spherical mirrors, center of curvature, principal axis, principal focus, focal length, mirror formula (Derivation not required), magnification. Refraction; Laws of refraction, refractive index. Refraction of light by spherical lens; Image formed by spherical lenses; Lens formula (Derivation not required); Magnification. Power of a lens. Functioning of a lens in human eye, defects of vision and their corrections, applications of spherical mirrors and lenses. Refraction of light through a prism, dispersion of light, scattering of light, applications in daily life

Part B:

Child Development, Pedagogy (15 Marks)

Unit 1: Child Development (Upper Primary School Children)

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Part C

General Studies & General Hindi/English (35 Marks)

सामान्य हिंदी (**अंक - 5)**

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1. Number, Gender, Articles
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honors, Traditions, folk songs and music, important personalities, other important topics related to Chhattisgarh.

14. National Education Policy (NEP) 2020.

Mathematics - Teacher,

Total Marks-100

Number	Subject matter	score
1	**PART –A** History of Mathematics, Nature of Mathematics, Learning, Teaching and Assessment of Mathematics	05
2	Arithmetic	10
3	Algebra	10
4	Trigonometry	05
5	Geometry	05
6	Menusaration	05
7	Statistics	10
8	**PART –B** Child Development and Pedagogy	15

9	**PART –C** Language Proficiency and General Studies	35
	Total	100

Mathematics

Unit 1

History of Mathematics, Nature of Mathematics, Teaching and Assessment of Mathematics:

Indian mathematicians and their works, Vedic mathematics, how mathematical ideas develop, nature of mathematics, mathematical thinking, abstraction, specialization, and generalization, learning models: learning by rote (banking model), learning by programming, learning by understanding, prevalent teaching practices, constructivist assessment in the classroom, development of abstract thinking, conceptual and procedural knowledge.

Unit 2 Number Maths

Number system, natural numbers, whole numbers, integers, rational and irrational numbers, real numbers, basic operations, addition, subtraction, multiplication, division, sequence of operations (BODMAS), fractions and decimals, ordinary fractions, decimal fractions, mixed fractions, operations on fractions, factors and multiples, prime numbers, prime factors, L.S. (LCM), M.Sc. (HCF/ GCD), Ratio and Proportion, Interest, Simple Interest, Compound Interest, Percentage, Profit-Loss

Discount, Simple Interest, Time and Working Time, Average Distance and Speed, Commerce Mathematics

Unit 3 Algebra

Real numbers, exponents, algebraic expressions, polynomials, one variable linear equation, two variable linear equation, quadratic equation of one variable, series: arithmetic progression and geometric progression,

Unit 4 Trigonometry

Trigonometric ratios, trigonometric identities, trigonometric values, graphs of trigonometric functions, trigonometric equations, height and distance.

Unit 5 Geometry

Lines and angles, plane figures: triangles, congruence of triangles, quadrilaterals, similarity in geometric shapes, circles and tangents, geometric constructions

Unit 6 Mensuration

Area of plane figures triangle, rectangle, parallelogram and trapezium

Surface area and volume of three dimensional shapes like cube, cuboid and right circular cylinder, cone and sphere

Unit 7 Statistics

Statistics: Collection and classification of data, frequency distribution table, tally marks, bar graphs and histograms, circular graphs (pie graphs). Graphs: Different types of graphs, arithmetic mean, median, mode.

Part B:

Child Development, Pedagogy (15 Marks)

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Basic methods of teaching and learning, strategies for children's learning, learning as a social activity, social perspective of learning. The child as a problem solver and scientific researcher. Cognition and emotion, motivation and learning, factors contributing to learning, personal and environmental.

Part C

General Studies & General Hindi/English (35 Marks)

सामान्य हिंदी (**अंक - 5)**

01. स्वर, व्यंजन, वर्तनी

02. लिंग, वचन, काल

03. संज्ञा, सर्वनाम, विशेषण, क्रिया, क्रिया विशेषण, कारक

04. समास रचना एवं प्रकार

05. संधि- स्वर, व्यंजन एवं विसर्ग संधि

06. व्याकरणिक अशुद्धियाँ

07. शब्द रचना उपसर्ग एवं प्रत्यय

08. शब्द प्रकार, तत्सम तदभव, देशज, विदेशी

09. पर्यायवाची, विलोम शब्द, अनेकार्थी शब्द, अनेक शब्दों या वाक्यांश के लिए एक शब्द

General English (5 Marks)

1. Number, Gender, Articles
2. Noun, Pronoun, Adjectives, Verb, Adverb
3. Preposition and Conjunctions
4. Synonyms, Antonyms, Homonyms,
5. One word substitution
6. Spellings, Prefixes, Suffixes
7. Proverb and Idioms

8. Active/Passive Voice

9. Sentences (Declarative, Negative, Interrogative, Imperative, Exclamatory)

10. Punctuations

General Mental Ability (10 Marks)

Reasoning, seeing relationships, analogies, numerical ability, spatial relationships, etc.

To test these factors, it will include questions like: spotting odds, numerical series, letter series, seeing relationships between letters, numbers and pictures, symbolic language, hidden pictures, squares and numbers, mathematical operations, matching pictures, various types of cube patterns, etc.

Computer Education (5 Marks)

- Introduction to Computers: What is a computer? Uses of computers in daily life (education, banking, healthcare, office work, communication, etc.), Importance and limitations of computers, General characteristics of computers.
- Major Components of a Computer: Introduction to hardware and software, CPU (Central Processing Unit), ALU, CU, Memory, Input devices (keyboard, mouse, scanner, touchpad, etc.), Output devices (monitor, printer, speakers, etc.).
- Types of Printers: Inkjet printers, LaserJet printers, Dot Matrix printers, Thermal and other modern printers.
- Operating Systems: Role of an operating system, MS-DOS, Commercial operating systems (Windows, macOS, etc.), Open-source operating systems (Linux, Ubuntu, etc.).
- Microsoft Office for Office Use: MS Word – Creating, editing, and formatting documents.MS Excel – Tables, formulas, and charts.MS PowerPoint – Slide creation, design, and presentations.

- Use of the Internet: Introduction to the Internet, Inbox, Outbox, CC, BCC, Creating and sending emails, Searching online documents, Website browsing, General knowledge of various government department websites.
- Antivirus and Computer Security: What is a computer virus? Types of viruses, Damages caused by viruses, Importance of antivirus software, Safety and security measures.
- Use of Multimedia: Meaning of multimedia, Use of audio, video, and text, Applications of multimedia.
- Storage Devices: Primary and secondary storage, Hard disk, pen drive, CD/DVD, Introduction to cloud storage.
- Search Engines and Online Platforms: Google, YouTube,What is a search engine? How to search for required information? Safe and effective searching techniques.

General Knowledge **(10 Marks)**

15. Major Constitutional Provisions, Fundamental duties and rights under the Indian Constitution, Indian political system and constitutional rights, Right to Information (RTI), Cultural and national personalities, Democracy and elections, Lok Sabha and Rajya Sabha.
16. Indian History and National Movement, Indian civilization and culture, Historical events ,History of Indian independence from 1857 to 1947, Events that occurred after 1947.
17. Geography: Basic geography, Geography of India and the World.
18. Indian Economy: Social and economic development, Population perspective, Gross National Product (GNP) and per capita income, Five-Year Plans, Agriculture and rural development, Industrial development, Indian economy and banking system, Current economic events
19. General Science: Basic concepts related to physics, chemistry, biology, and botany
20. General Knowledge of Chhattisgarh: History of Chhattisgarh, Geography of Chhattisgarh, Political system, Economy, Government schemes, Awards and honors, Traditions, folk songs and music, important personalities, other important topics related to Chhattisgarh.
21. National Education Policy (NEP) 2020.

Teacher - Physical Education

Total Marks – 100

Part	Subject / Section	Marks
Part - A	Psychology and History of Sports	10
	Scientific Development and Sports	10
	Organisation, Coaching and Officiating/Decision Making	10
	General Knowledge of Yoga	10
	Miscellaneous	10
Part - B	Language proficiency (Hindi & English)	20
Part - C	General Studies	30
	Total	100

PART - A

A. Psychology and History of Sports (10 Marks)

- Comparative study of ancient and modern Olympic activities.
- History and development of various sports.
- Meaning, nature, and scope of sports psychology.
- Relationship of sports psychology with sports.

- Importance of sports psychology for coaches and physical education teachers.
- Personality development through participation in sports.
- Role of motivation, behavior, and interest in physical activities.
- Levels of ambition, sensation, frustration, and conflict, and their impact on sports performance.
- Sports spectators and the impact of their behavior on sports performance.
- Socio-psychological aspects of physical activities.

B. Scientific Development and Sports (10 Marks)

- Scientific validity of various tests for sports development.
- Functions of the cardiorespiratory system and its impact on sports performance.
- Motor ability and its testing.
- Knowledge and skill testing.
- Physiological functional changes due to exercise:
  - (a) Impact of exercise and training on the cardiovascular system.
  - (b) Impact of exercise and training on the respiratory system.
- Energy expenditure in various sports activities.
- Role of sports medicine in the development of sports.
- Application of mechanical principles (Biomechanics) in various sports.
- Principles and important characteristics of training load.
- Important motor components for training such as speed, strength, endurance, flexibility, and coordinative ability.

C. Organisation, Coaching, and Officiating (10 Marks)

- Influence of professional organizations on the development of sports.
- Public relations and promotional activities in sports.
- Important principles and procedures for conducting sports competitions.
- Methods of marking athletic tracks and sports fields.
- Relationship between management, coach, captain, and spectators.
- Duties of officials before and after sports competitions.

- Difference between teacher, trainee, and coach.
- Principles of coaching.
- Rules of various sports.
- Principles of sports team selection.
- Application of psychology in coaching.
- Application of scientific principles in coaching.

D. General Knowledge of Yoga (10 Marks)

- Brief history and development of Yoga.
- General guidelines for Yoga practice.
- **Yogasanas:** Tadasana, Vrikshasana, Padahastasana, Ardha Chakrasana, Trikonasana, Bhadrasana, Vajrasana, Veerasana, Ardha Ushtrasana, Shashakasana, Setubandhasana, Uttanapadasana, Ardha Halasana, Pavanamuktasana, Shavasana.
- **Kapalbhati:** Methodology/Procedure.
- **Pranayama:** Nadi Shodhana / Anulom Vilom Pranayama, Sheetali Pranayama, Bhramari Pranayama.

E. Miscellaneous (10 Marks)

- Leadership in sports.
- Classification in sports.
- League-cum-knockout tournaments.
- Rhythmic activities in sports.
- National Institute of Sports (NIS).
- Sports Authority of India (SAI).
- Health Education.
- Oxygen Debt.
- Lung capacity / Breathing capacity.
- Indian Premier League (IPL).
- Organization of camps in sports.
- Relevance/Rationale of sports seminars and conferences.

- Role of media in the promotion of sports.
- Individual differences.
- Nutrition in sports.
- Learning plateau.

PART - B

सामान्य हिंदी **अंक 10---**

01. स्वर, व्यंजन, वर्तनी
02. लिंग, वचन, काल
03. संज्ञा, सर्वनाम, विशेषण, क्रिया, क्रिया विशेषण, कारक
04. समास रचना एवं प्रकार
05. संधिस्वर -, व्यंजन एवं विसर्ग संधि
06. व्याकरणिक अशुद्धियाँ
07. शब्द रचना उपसर्ग एवं प्रत्यय
08. शब्द प्रकार, तत्सम तदभव, देशज, विदेशी
09. पर्यायवाची, विलोम शब्द, अनेकार्थी शब्द, अनेक शब्दों या वाक्यांश के लिए एक शब्द

General English (10 Marks)

1. Number, Gender, Articles
2. Noun, Pronoun, Adjectives, Verb, Adverb
3. Preposition and Conjunctions
4. Synonyms, Antonyms, Homonyms
5. One word substitution
6. Spellings, Prefixes, Suffixes
7. Proverb and Idioms
8. Active/Passive Voice
9. Sentences (Declarative, Negative, Interrogative, Imperative, Exclamatory)
10. Punctuations

General Studies: General Mental Ability (10 Marks)

- Reasoning, Identifying relations, Analogy, Numerical ability, Spatial relationships, etc.
- To test these factors, questions are generally asked from: Odd-one-out, Number series, Letter series, Relationships through letters, numbers, and figures, Coding-decoding, Hidden figures, Squares and digits, Mathematical operations, Matching figures, Various patterns related to cubes, etc.

Computer Education (10 Marks)

- **Introduction to Computers:** What is a computer?, Use of computers in daily life (Education, Banking, Health, Office, Communication, etc.), Importance and limitations of computers, General characteristics of computers.
- **Major Parts of a Computer:** Introduction to Hardware and Software, CPU, ALU, CU, Memory, Input devices (Keyboard, Mouse, Scanner, Touchpad, etc.), Output devices (Monitor, Printer, Speaker, etc.).
- **Types of Printers:** Inkjet printer, Laserjet printer, Dot matrix printer, Thermal, and other modern printers.
- **Operating System:** Role of operating system, MS-DOS, Commercial operating systems (Windows, macOS, etc.), Open-source operating systems (Linux, Ubuntu, etc.).
- **Microsoft Office for Office Use:** MS Word (Document creation, editing, formatting), MS Excel (Tables, formulas, charts), MS PowerPoint (Slide creation, design, presentation).
- **Use of Internet:** Introduction to Internet, Inbox, Outbox, CC, BCC, Creating and sending emails, Online document search, Website surfing, General knowledge of websites of various government departments.
- **Antivirus and Computer Security:** What is a computer virus?, Types of viruses, Damages caused by viruses, Importance of antivirus software, Security measures.

- **Use of Multimedia:** Meaning of multimedia, Use of audio, video, and text, Multimedia applications.
- **Storage Devices:** Primary and secondary storage, Hard disk, Pen drive, CD/DVD, Introduction to Cloud storage.
- **Search Engines and Online Platforms:** Google, YouTube, What is a search engine?, How to find desired information?, Safe and effective searching techniques.

General Knowledge (10 Marks)

1. Major constitutional provisions, Fundamental Duties, Indian political system and Constitution, Rights, Right to Information (RTI), Culture, National personalities, Democracy and Elections, Lok Sabha, Rajya Sabha.
2. Indian History and National Movement: Indian civilization and culture, Historical events, History of Indian Independence from 1857 to 1947, and events post-1947.
3. Geography: General Geography up to C.G. Board Class 10th level, Geography of India and the World.
4. Indian Economy: Social and economic development, Population perspective, Gross National Product (GNP) and Per Capita Income, Five-Year Plans, Agriculture and Rural Development, Industrial Development, Indian Economy, Banking system, Current economic events.
5. General Science: Basic information related to Physics, Chemistry, Biology, and Botany up to C.G. Board Class 10th level.
6. General Knowledge of Chhattisgarh: History, Geography, Political system, Economy, Government schemes, Awards-Honors, Traditions, Folk songs-music, Important personalities, and other important topics related to Chhattisgarh.
7. New Education Policy (NEP) 2020: Part I (School Education).

Librarian Total Marks-100

S.NO.	CONTENT	MARKS
1	PART A Foundation of Library & Information Science	10
2	Principles, Acts and Laws of Library & Information Science	10
3	Knowledge Organization, Information Processing & Retrieval.	10
4	Information Technology: Basic	10
5	Management of Libraries & Information Centres/Institutions	10
6	Information Sources & Services	10
7	Library Users	10
8	PART B 1.Language proficiency (Hindi & English 2. General Studies	10 20
	TOTAL	100

Part 1: Foundation of Library & Information Science.

- Library as a Social Institution Social & Historical foundations of Library.
- National Libraries and their Historical Foundations
- Library and Information Profession
- Promoters of Library & Information Services

Part II: Principles, Acts and Laws of Library & Information Science

- Normative Principles of Lib. & Inf. Science.
- Persons Related to Library & Information Science Subject and their Books & Committees and their Chairmen
- State Public Library Act in India
- Laws relating to Libraries & Information.

Part III: Knowledge Organization, Information Processing & Retrieval.

- Universe of Knowledge
- Bibliographic description
- Methods of Knowledge Organization
- Subject Classification
- Public relations & Extension activities

Part IV: Information Technology: Basic

- Information Technology
- Computer Basic
- Computer Architecture
- Software.
- MS-Office package
- DBMS Package

- Computer application to library & Information work
- Communication Technology
- Common Types of Network Devices
- Storage Devices and Storage Units
- Computer Languages

Part V: Management of Libraries & Information Centres/Institutions

- Management
- Management Theories and their Author/Developer
- Human Resource Management
- Financial Management
- System Analysis and Design
- Total Quality Management (TQM)
- Planning
- Management of change.

Part Vl: Information Sources & Services

- Reference and information sources
- Reference Service.
- Information Services and Products
- Information System and their Services
- Reporting
- Library House Keeping Operations.

Part VII: Library Users

- Techniques of Library and Information Centres Survey
- Information users and their information Needs User Education Goals and Objectives level
- User Studies
- User Orientation Programmes:
- User Library Application Software and Netwoks
- Emerging Technology & Digital Technologies

PART - 2

1. **सामान्य हिंदी** **(05 Marks)**
    - स्वर, व्यंजन, वर्तनी
    - लिंग, वचन, काल
    - संज्ञा, सर्वनाम, विशेषण, क्रिया, क्रिया विशेषण, कारक
    - समास रचना एवं प्रकार
    - संधि- स्वर, व्यंजन एवं विसर्ग संधि
    - व्याकरणिक अशुद्धियाँ
    - शब्द रचना उपसर्ग एवं प्रत्यय
    - शब्द प्रकार, तत्सम तदभव, देशज, विदेशी
    - पर्यायवाची, विलोम शब्द, अनेकार्थी शब्द, अनेक शब्दों या वाक्यांश के लिए एक शब्द
2. **General English.** **(05 Marks)**
    - Number, Gender, Articles
    - Noun, Pronoun, Adjectives, Verb, Adverb
    - Prepositions and Conjunctions
    - Synonyms, Antonyms, Homonyms

- One word substitution
- Spellings, Prefixes, Suffixes
- Proverbs and Idioms
- Active/Passive Voice
- Sentences (Declarative, Negative, Interrogative, Imperative, Exclamatory)
- Punctuation

General Mental Ability. (10 Marks)

- Reasoning, Identifying relations, Analogy, Numerical ability, Spatial relationships, etc.
- To test these factors, questions are generally asked from: Odd-one-out, Number series, Letter series, Relationships through letters, numbers, and figures, Coding-decoding, Hidden figures, Squares and digits, Mathematical operations, Matching figures, Various patterns related to cubes, etc.

3. **General Knowledge. (10 Marks)**

- Major constitutional provisions, Fundamental Duties, Indian political system and Constitution, Rights, Right to Information (RTI), Culture, National personalities, Democracy and Elections, Lok Sabha, Rajya Sabha.

- Indian History and National Movement: Indian civilization and culture, Historical events, History of Indian Independence from 1857 to 1947, and events post-1947.
- Geography: General Geography up to C.G. Board Class 10th level, Geography of India and the World.
- Indian Economy: Social and economic development, Population perspective, Gross National Product (GNP) and Per Capita Income, Five-Year Plans, Agriculture and Rural Development, Industrial Development, Indian Economy, Banking system, Current economic events.
- General Science: Basic information related to Physics, Chemistry, Biology, and Botany up to C.G. Board Class 10^{th} level.
- General Knowledge of Chhattisgarh: History, Geography, Political system, Economy, Government schemes, Awards-Honors, Traditions, Folk songs-music, important personalities, and other important topics related to Chhattisgarh.
- New Education Policy (NEP) 2020: Part I (School Education).

Teacher - Computer

TOTAL MARKS - 100

S.NO.	SUBJECT/SECTION	MARKS
PART - 1		
1	**Computer Fundamentals, Architecture & Organisation, Operating Systems, System Software & Troubleshooting, Office Automation & Data Productivity.**	**15**
2	**Programming, Computational Thinking & Coding (PYTHON), Database Management & Advanced SQL**	**15**
3	**Computer Networks & Internet Technologies, Hardware, System Maintenance & ICT Support.**	**10**
4	**Web Technology & JavaScript, Cyber Security, Digital Citizenship & IT Law.**	**10**
5	**Artificial Intelligence, Machine Learning & Emerging Technologies**	**10**
PART - 2		
1	**सामान्य हिंदी**	**10**
2	**General English**	**10**
3	**General Mental Ability**	**10**
4	**General Knowledge**	**10**
	TOTAL	**100**

PART - 1

1. **Computer Fundamentals, Architecture & Organisation, Operating Systems, System Software & Troubleshooting. Office Automation & Data Productivity.**

(15 Marks)

- Computer Fundamentals, Architecture & Organisation, Operating Systems, System Software & Troubleshooting, Office Automation & Data Productivity
- Computer Architecture: Functional Units, CPU, GPU, NPU, ALU, CU, Registers, Basic Concept of the Instruction Cycle, Primary/Secondary/Cache Memory, Types of RAM and ROM, Storage Technologies, Input/Output Devices, Ports & Interfaces, Data Representation, Number Systems, Binary/Decimal/Octal/Hexadecimal Conversion, Boolean Logic, Logic Gates, Truth Tables, and De Morgan's Laws.

- Operating Systems, System Software & Troubleshooting: Functions of Operating Systems, Basic Concepts of Process Management and File Management, Windows and Linux, GUI/CLI, Boot Process, File Systems, File Permissions, Users and Accounts, Device Drivers, Software Installation, Backup and Restore, Antivirus/Anti-malware, Common Hardware and Software Problems, System Diagnostics, Basic Linux Commands, and Open-Source Software.
- Office Automation & Data Productivity: Document Processing: Advanced Formatting, Styles, Tables, Mail Merge, and Document Management. Spreadsheet: Advanced Formulas, Relative/Absolute/Mixed Cell References, Logical and Lookup Functions, Sorting and Filtering, Data Validation, Charts, Pivot Tables, What-If Analysis, Goal Seek, and Basic Data Analysis. Presentation: Advanced Presentation Design, Objects, Animation, and Multimedia. Open-Source Office Tools.

2. Programming, Computational Thinking & Coding (Python), Database Management & Advanced SQL. (15 Marks)

- **Programming, Computational Thinking & Coding (Python):** Problem Analysis, Computational Thinking, Algorithms, Flowcharts, Pseudocode, Programming Syntax & Structure, Variables and Data Types, Operators and Operator Precedence, Conditional Statements, Iteration, Nested Loops, Strings, Lists, Tuples, Dictionaries, Mutable and Immutable Data Types, Functions, Arguments and Parameters, Default and Positional Arguments, Return Values, Local and Global Scope, **Basic Understanding of Recursion**, **Basic Concept of Exception Handling**, File Handling, Text/CSV Files, read(), readline(), readlines(), write(), seek(), tell(), Debugging, **Code Tracing, Output Prediction & Error Detection**, Object-Oriented Programming (OOP), Modules and Libraries.
- **Database Management & Advanced SQL:** Database & DBMS, RDBMS, Relational Model, Attributes, Tuples, Domains, Degree and Cardinality, Candidate/Primary/Alternate/Foreign Keys, Relationships, Data Integrity & Constraints, MySQL, DDL/DML/DQL, Data Types, **SELECT Queries, WHERE, ORDER BY, GROUP BY, HAVING, Aggregate Functions, Logical Operators, LIKE, BETWEEN, IN**, Basic Joins, **Basic Understanding of Nested Queries/Subqueries**, SQL String, Mathematical and Date Functions.

3. Computer Networks & Internet Technologies, Hardware, System Maintenance & ICT Support. (10 Marks)

- **Computer Networks & Internet Technologies:** Network Fundamentals, LAN/MAN/WAN, Client-Server & Peer-to-Peer (P2P) Networks, Network Topologies, Transmission Media, Network Devices, MAC Address/IP Address, IPv4 Addressing, **Network Classes & Basic Subnetting**, Logical vs. Physical Addressing, OSI 7-Layer Model, TCP/IP Model, **Basic Understanding of TCP/UDP**, HTTP/HTTPS, FTP, DNS, DHCP, URL, WWW, Internet Services, Wireless Networking, **Basic Concept of Proxy & Firewall**.

- **Hardware, System Maintenance & ICT Support:** Motherboard Architecture, Processor Generations & Specifications, RAM Compatibility, HDD/SSD, Storage Interfaces, SMPS, BIOS/CMOS, Ports & Connectors, Peripheral Devices, **Basic PC Assembly**, Preventive Maintenance, Hardware Diagnostics, Boot Problems, Storage/Memory Issues, Software-Hardware Compatibility, Backup & Recovery, E-Waste Management, Electrical & Equipment Safety.

4. Web Technology & JavaScript, Cyber Security, Digital Citizenship & IT Law. (10 Marks)

- Web Technology & JavaScript: Web Architecture, Static/Dynamic Web Pages, HTML Structure, Semantic Elements, Tables, Forms, HTML Attributes, CSS Selectors, Properties & Layout Basics, Basic Understanding of Responsive Design, JavaScript Syntax, Variables, Constants, Data Types, Operators, Conditional Statements, Loops, Arrays, Strings, Functions, Built-in Functions, Basic Concept of the DOM, Events & Basic Client-side Interaction, Web Servers, and Web Authoring Tools.
- Cyber Security, Digital Citizenship & IT Law: Cyber Security Fundamentals, CIA Triad, Basic Understanding of Authentication & Authorization, Password Security, Basic Concept of Encryption, Malware, Virus, Worm, Trojan, Spyware, Ransomware, Phishing, Spoofing, Hacking, Eavesdropping, Basic Understanding of Social Engineering, Cyber Fraud, Identity Protection, Privacy, Digital Footprint, Cyber Bullying, IPR, Copyright, Patent, Trademark, Plagiarism, FOSS & Licensing, Cyber Laws, and an Overview of the Indian IT Act.

5. Artificial Intelligence, Machine Learning & Emerging Technologies. (10 Marks)

- **Artificial Intelligence (AI) Fundamentals,** AI vs Human Intelligence, AI Applications, Problem Solving using AI, **Machine Learning Fundamentals**, Supervised & Unsupervised Learning, Training Data & Features, Classification & Prediction, **Natural Language Processing (NLP)**, **Generative AI**, Large Language Models (LLMs) – Basic Understanding, **Prompt Engineering – Basics**, AI Tools in Education, AI-assisted Teaching & Learning, AI Ethics, Bias, Privacy & Responsible AI, **Internet of Things (IoT)**, **Sensors**, **Robotics**, **Big Data**, **AR/VR**, **Cloud Computing**

PART - 2

4. सामान्य हिंदी (10 Marks)

- स्वर, व्यंजन, वर्तनी
- लिंग, वचन, काल
- संज्ञा, सर्वनाम, विशेषण, क्रिया, क्रिया विशेषण, कारक
- समास रचना एवं प्रकार
- संधि- स्वर, व्यंजन एवं विसर्ग संधि
- व्याकरणिक अशुद्धियाँ

- शब्द रचना उपसर्ग एवं प्रत्यय
- शब्द प्रकार, तत्सम तदभव, देशज, विदेशी
- पर्यायवाची, विलोम शब्द, अनेकार्थी शब्द, अनेक शब्दों या वाक्यांश के लिए एक शब्द

5. General English. (10 Marks)

- Number, Gender, Articles
- Noun, Pronoun, Adjectives, Verb, Adverb
- Prepositions and Conjunctions
- Synonyms, Antonyms, Homonyms
- One word substitution
- Spellings, Prefixes, Suffixes
- Proverbs and Idioms
- Active/Passive Voice
- Sentences (Declarative, Negative, Interrogative, Imperative, Exclamatory)
- Punctuation

6. General Mental Ability. (10 Marks)

- Reasoning, Identifying relations, Analogy, Numerical ability, Spatial relationships, etc.
- To test these factors, questions are generally asked from: Odd-one-out, Number series, Letter series, Relationships through letters, numbers, and figures, Coding-decoding, Hidden figures, Squares and digits, Mathematical operations, Matching figures, Various patterns related to cubes, etc.

7. General Knowledge. (10 Marks)

- Major constitutional provisions, Fundamental Duties, Indian political system and Constitution, Rights, Right to Information (RTI), Culture, National personalities, Democracy and Elections, Lok Sabha, Rajya Sabha.
- Indian History and National Movement: Indian civilization and culture, Historical events, History of Indian Independence from 1857 to 1947, and events post-1947.
- Geography: General Geography up to C.G. Board Class 10th level, Geography of India and the World.
- Indian Economy: Social and economic development, Population perspective, Gross National Product (GNP) and Per Capita Income, Five-Year Plans, Agriculture and Rural Development, Industrial Development, Indian Economy, Banking system, Current economic events.
- General Science: Basic information related to Physics, Chemistry, Biology, and Botany up to C.G. Board Class 10^{th} level.
- General Knowledge of Chhattisgarh: History, Geography, Political system, Economy, Government schemes, Awards-Honors, Traditions, Folk songs-music, important personalities, and other important topics related to Chhattisgarh.
- New Education Policy (NEP) 2020: Part I (School Education).

शिक्षक – संस्कृत भर्ती परीक्षा पाठ्यक्रम

कुल अंक - 100

विषय-वस्तु	**अंक**
भाग – अ 1. व्याकरण	20
2. वाक्य रचना	10
3. काव्यांश	10
4. गद्यांश	10
भाग - ब बाल विकास एवं शिक्षा शास्त्र	15
भाग – स भाषा ज्ञान एवं सामान्य अध्ययन	35
योग	**100**

भाग – अ

1. व्याकरण **(अंक-20)**

* वर्ण व उच्चारण स्थान

* शब्दरूप

1. स्वरान्त – बालक, फल, पत्र, मति, कवि, वारि, नदी, कुमारी, गुरु, मधु, वधू।

2.व्यञ्जनान्त-राजन्, जगत्, भवत्, आत्मन्, चन्द्रमस्, विद्वस्, पथिन्।

3. सर्वनाम सर्व, किम्, तत्, एतत्, अस्मद्, युष्मद्।

*संख्या - शतम् यावत् (सौ तक)।

अपठित-अवबोधन

*धातुरूप - पठ्, पच्, भू, कृ, खेल्, लिख्, दृश्, स्था, तुद्, तुह, रुध्, लभ्, रूच्|

(लट्,लृट्,लङ्,लोट्,विधिलिङ्ग लकारों में।)

*कारक परिचय व सभी विभक्तियाँ।-

*प्रत्यय - कृदन्त - ल्यप्, शतृ, शानच्, तुमुन्।

तद्धित त्व, तल, ठक्, मतुप्, तरप्, तमप्।

*सन्धि- स्वर सन्धि- दीर्घ, गुण, यण, वृद्धि, अयादि

व्यञ्जन सन्धि
विसर्ग सन्धि

*समास - तत्पुरुष, कर्मधारय, द्विगु, द्वन्द्व, कर्मधारय, बहुब्रीहि।

* अव्यय - अद्य, श्वः, ह्यः, उच्चै, नीचैः शनैः, अपि, च, अत्र, तत्र, अन्यत्र, सर्वत्र, एकत्र, कुत्र, यत्र, इदानीम्, तदानीम्, अधुना, सम्प्रति, यदा, कदा, तदा, सहसा, एकदा, सर्वथा, सदा, सर्वधा, न, सह, शीघ्रम्।

* उपसर्ग - 22 उपसर्ग

* समय बोधनम् – घटी आधारितम् ।

2. वाक्य रचना **(अंक-10)**

भाग-क में निर्धारित व्याकरण बिन्दुओं के प्रयोग पर आधारित शुद्ध - अशुद्ध-निर्णय |

अपठित-अवबोधन

अपठित अनुच्छेदों का अवबोधन- अनुवाद एवं प्रश्नोत्तर लघु संस्कृत निबन्ध संस्कृत भाषा, साहित्य और संस्कृत से सम्बन्धित ।

3. काव्यांश **(अंक-10)**

रघुवंशमहाकाव्यम्-प्रथम सर्ग 1-25 श्लोक

अभिज्ञान शाकुन्तलम् – चतुर्थ: अंक :

भगवद्गीता – द्वितीय: अध्याय:

4. गद्यांश **(अंक-10)**

शुकनासोपदेश :- प्रारम्भ से लक्ष्मीवर्णन के प्रसंग एक 'स्वल्पसत्त्वमुन्मतीकरोति' (बाणभट्टकृत कादम्बरी के अन्तर्गत ।)

पञ्चतन्त्रम् – विष्णु शर्मा

* कवि परिचय – कालिदास, भास, भवभूति, शूद्रक, भारवि, श्रीहर्ष, भर्तृहरि ।

* संस्कृत सुभाषित - सूक्तियों का ज्ञान,सुभाषित ।

* छन्द - अनुष्टुप, उपजाति, वंशस्थ, वसन्ततिलका, मालिनी, स्रग्धरा एवं शार्दूलविक्रीडित ।

* अलंकार – अनुप्रास, उपमा, रूपक, उत्प्रेक्षा, यमक, श्लेष एवं अर्थान्तरन्यास ।

* वैदिक साहित्य - चारों वेदों का सामान्य परिचयः, ईशावास्योपनिषद, तैत्तिरियोपनिषद् ।

बाल विकास एवं शिक्षा शास्त्र 15 Marks

इकाई 1 : बच्चे का विकास (उच्च प्राथमिक शाला बालक)

विकास की अवधारणा एवं उसका सीखने से संबंध, बच्चों के विकास के सिद्धान्त, वंशानुक्रम एवं वातावरण का प्रभाव, बुद्धिमत्ता के सृजन का समालोचनात्मक परिप्रेक्ष्य, बहु आयामी बुद्धि, भाषा एवं विचार, सीखने वालों के मध्य वैयक्तिक विभिन्नता, भाषायी विभिन्नता, जाति, लिंग, समुदाय, धर्म, इत्यादि पर आधारित समझने में अन्तर, सीखने हेतु मूल्याँकन व सीखने का मूल्याँकन के मध्य अन्तर, शाला आधारित मूल्याँकन एवं सतत् व समग्र मूल्याँकन, परिप्रेक्ष्य एवं अभ्यास।

इकाई 2 :समावेशी शिक्षा की अवधारणा तथा विशिष्ट आवश्यकता वाले बच्चों को समझना

वंचित व कमजोर सहित विभिन्न पृष्ठभूमि से आए सीखने वाले का शिक्षण।

सीखने में कठिनाई, विकलांगता आदि से संबंधित बच्चों का शिक्षण ।

सृजनात्मक एवं विशिष्ट योग्यता वाले, सीखने वालों का शिक्षण।

इकाई 3: सीखना एवं शिक्षाशास्त्र

सीखने-सिखाने के आधारभूत तरीके, बच्चों के सीखने की व्यूह रचना, सामाजिक क्रियाकलाप के रूप में सीखना, सीखने का सामाजिक परिप्रेक्ष्य। बालक, समस्या समाधान करने वाला व वैज्ञानिक अनुसंधान करने वाले के रूप में। संज्ञान एवं संवेग, अभिप्रेरणा व सीखना, सीखने में सहयोगी कारक वैयक्तिक एवं पर्यावरणीय

सामान्य अध्ययन

सामान्य हिन्दी

(अंक - 5)

1. स्वर, व्यंजन, वर्तनी
2. लिंग, वचन, काल
3. संज्ञा, सर्वनाम, विशेषण, क्रिया, क्रिया विशेषण, कारक
4. समास रचना एवं प्रकार
5. संधि- स्वर, व्यंजन एवं विसर्ग संधि
6. रस व अलंकार, दोहा, छंद, सोरठा
7. व्याकरणिक अशुद्धियाँ
8. शब्द रचना उपसर्ग एवं प्रत्यय
9. शब्द प्रकार, तत्सम तदभव, देशज, विदेशी
10. पर्यायवाची, विलोमार्थी, अनेकार्थी शब्द, अनेक शब्दों या वाक्यांश के लिए एक शब्द
11. मुहावरे व लोकोक्तियां

सामान्य अंग्रेजी **(अंक -5)**

UNIT-1 ENGLISH GRAMMAR-

1. Number, Gender, Articles
2. Pronoun, Adjectives, Verb, Adverb
3. Use of some important Conjunctions
4. Use of some important preposition

UNIT-2 TRANSFORMATION OF SENTENCES

1. Active/Passive Voice
2. Direct/Indirect Narration

UNIT-3 VOCABULARY

1. Synonyms/Antonyms
2. One-word substitution
3. Spellings
4. Proverb, Idioms and phrases

सामान्य मानसिक योग्यता **(अंक -10)**

तर्क करना, संबंध देखना, एनालॉजी, आंकिक योग्यता, आकाशीय संबंध आदि।

इन कारकों का परीक्षण करने के लिए सामान्यतः इस प्रकार के प्रश्न पूछे जाते हैं- विषमता को पहचानना, आंकिक श्रेणी, अक्षर क्षेणी, अक्षर, अंक और चित्रों द्वारा संबंध देखना, सांकेतिक भाषा, छुपे हुए चित्र, वर्ग एवं अंक, गणितीय संक्रियाएँ, चित्रों का मिलान, घन संबंधी विभिन्न प्रकार के पैटर्न आदि-आदि।

कम्प्यूटर शिक्षा – **(अंक -5)**

- कम्प्यूटर का परिचय : कम्प्यूटर क्या है?, दैनिक जीवन में कम्प्यूटर का उपयोग,(शिक्षा, बैंकिंग, स्वास्थ्य, कार्यालय, संचार आदि), कम्प्यूटर का महत्व और सीमाएँ, कम्प्यूटर की सामान्य विशेषताएँ।
- कम्प्यूटर के प्रमुख भाग: हार्डवेयर एवं सॉफ्टवेयर का परिचय,सी.पी.यू. (CPU),ALU, CU, Memory, इनपुट डिवाइस (कीबोर्ड, माउस, स्कैनर, टचपैड आदि), आउटपुट डिवाइस (मॉनिटर, प्रिंटर, स्पीकर आदि)।
- प्रिंटर के प्रकार : इंकजेट प्रिंटर,लेज़रजेट प्रिंटर,डॉट मैट्रिक्स प्रिंटर,थर्मल एवं अन्य आधुनिक प्रिंटर।
- ऑपरेटिंग सिस्टम : ऑपरेटिंग सिस्टम की भूमिका, एम.एस. डॉस (MS-DOS), कमर्शियल ऑपरेटिंग सिस्टम (Windows, macOS आदि), ओपन सोर्स ऑपरेटिंग सिस्टम (Linux, Ubuntu आदि)।
- कार्यालयीन उपयोग हेतु Microsoft Office : MS Word - डॉक्यूमेंट बनाना, संपादन, फॉर्मेटिंग। MS Excel - टेबल, फार्मूले, चार्ट। MS PowerPoint - स्लाइड निर्माण, डिज़ाइन, प्रस्तुतीकरण।
- इंटरनेट का उपयोग : इंटरनेट का परिचय, Inbox, Outbox, CC, BCC, ई-मेल बनाना व भेजना, ऑनलाइन डॉक्यूमेंट खोज, वेबसाइट सर्फिंग, विभिन्न सरकारी विभागों की वेबसाइटों की सामान्य जानकारी ।
- एंटीवायरस एवं कम्प्यूटर सुरक्षा : कम्प्यूटर वायरस क्या है?, वायरस के प्रकार, वायरस से होने वाले नुकसान, एंटीवायरस सॉफ्टवेयर का महत्व ,सुरक्षा उपाय।

- मल्टीमीडिया का उपयोग : मल्टीमीडिया का अर्थ, ऑडियो, वीडियो और टेक्स्ट का उपयोग, मल्टीमीडिया अनुप्रयोग।
- स्टोरेज डिवाइस : प्राथमिक व द्वितीयक स्टोरेज, हार्ड डिस्क, पेन ड्राइव, सीडी/डीवीडी, क्लाउड स्टोरेज का परिचय।
- सर्च इंजिन एवं ऑनलाइन प्लेटफॉर्म - गूगल, यूट्यूब, सर्च इंजिन क्या है?, वांछित जानकारी कैसे खोजें?, सुरक्षित एवं प्रभावी सर्चिंग तकनीकें।

सामान्य ज्ञान (अंक -10)

1. मुख्य संवैधानिक प्रावधान, मौलिक कर्तव्य एवं भारतीय राजनैतिक व्यवस्था एवं संविधान अधिकार, सूचना का अधिकार, सांस्कृतिक, राष्ट्रीय व्यक्तित्व, लोकतंत्र एवं चुनाव लोकसभा, राज्यसभा।
2. भारतीय इतिहास एवं राष्ट्रीय आंदोलन भारतीय सभ्यता एवं सांस्कृतिक, ऐतिहासिक घटनाएं, भारतीय स्वतंत्रता का इतिहास 1857 से 1947 तथा, 1947 के बाद का घटनाक्रम।
3. भूगोल : छ.ग. बोर्ड के कक्षा 10 वीं तक के स्तर तक सामान्य भूगोल, भारत एवं विश्व का भूगोल।
4. भारतीय अर्थव्यवस्था: सामाजिक एवं आर्थिक विकास, जनसंख्या परिप्रेक्ष्य, सकल राष्ट्रीय उत्पादन और प्रति व्यक्ति आय, पंचवर्षीय योजनाएं, कृषि व ग्रामीण विकास, औद्योगिक विकास, भारतीय अर्थव्यवस्था, बैंक प्रणाली, वर्तमान आर्थिक घटनाक्रम
5. सामान्य विज्ञान : छ.ग. बोर्ड के कक्षा 10वीं तक के स्तर तक भौतिकी, रसायनशास्त्र एवं जीव तथा वनस्पति विज्ञान से संबंधित मूलभूत जानकारी।
6. छत्तीसगढ़ की सामान्य जानकारी : छत्तीसगढ़ का इतिहास, भूगोल, राजनैतिक व्यवस्था, अर्थव्यवस्था शासकीय योजनाएं, पुरस्कार-सम्मान, परम्परायें लोकगीत-संगीत, महत्वपूर्ण व्यक्तिव एवं छत्तीसगढ़ से संबंधित अन्य महत्वपूर्ण विषय।
7. नई शिक्षा नीति 2020।

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Laboratory Assistant

TOTAL MARK -100

Content	**Marks**
PART-A 1. Physics	25
2. Chemistry	25
3. Biology	25
PART-B General Hindi and English and General Studies	25
Total	100

Physics

1. The world of physics - the purpose and motivation of physics, the nature of physical laws, physics, experiments, and society.

2. Units and measurement - the need for measurement; units and measurement; systems of units; SI units; fundamental and derived units; measurement of length, mass, and time; diagrams; dimensions of physical quantities, dimensional analysis, and its applications.

3. One-dimensional motion - reference systems, motion along a straight line, position-time graphs, speed and velocity, explanation of motion through elementary knowledge of differentiation and integration, uniform and non-uniform motion, velocity-time graphs, and position-time graphs. Relations of uniformly accelerated motion (graphical analysis).

4. Motion in a plane (two-dimensional motion) - Scalar and vector quantities, position and displacement vectors, normal vectors and their representation, equal vectors, multiplication of a vector by a real number, sum and difference of vectors, relative velocity, unit vectors, decomposition of vectors in a plane, rectangular components, scalar and vector multiplication. Motion in a plane, motion with uniform velocity and acceleration, projectile motion, uniform circular motion.

5. Laws of motion - concept of force, inertia, Newton's first law of motion, momentum, Newton's second law of motion, impulse, Newton's third law of motion. Law of conservation of linear momentum and its applications. Balance of homogeneous forces, static and kinetic friction, laws of friction, rolling friction, lubricants. Dynamics of uniform circular motion, centripetal force, examples of circular motion (motion of a car on a circular plane road, motion of a car on a banked road).

6. Work, Energy, and Power - Work done by a constant and variable force, kinetic energy, the work-energy theorem, and power. The concept of potential energy, potential energy of a spring, conservative forces, conservation of mechanical energy (potential and kinetic energy), non-conservative forces, vertical circular motion, one-dimensional and two-dimensional elastic and inelastic collisions.

7. Systems of Particles and Rotational Motion - Center of mass of a two-particle system, conservation of momentum and motion of the center of mass, center of mass of a rigid body, center of mass of a uniform rod. torque, angular momentum, the law of conservation of angular momentum and its applications. Equilibrium of rigid bodies, rotation of rigid bodies and equations of rotational motion, comparison of linear and rotational motion. Moment of inertia, radius of gyration, formulas for moment of inertia of objects of simple geometric shapes, parallel and perpendicular axis theorems, and their applications.

8. Gravitation—Kepler's laws of planetary motion, universal gravitation, gravitational acceleration, variation of gravitational acceleration with altitude, depth, and position, gravitational potential energy, gravitational potential, orbital velocity of a satellite, geostationary satellite.

9. Mechanical properties of solids—elastic behavior, stress-strain relationship, Hooke's law, Young's modulus of elasticity, volumetric elastic modulus, modulus of rigidity, Poisson's result, elastic energy.

10. Mechanical properties of fluids—pressure due to a fluid column, Pascal's law and its applications (hydraulic elevators, hydraulic brakes), effect of gravity on fluid pressure, viscosity, Stokes' law, terminal velocity, streamline and turbulent flow, critical velocity, Bernoulli's theorem and its applications. Surface energy and surface tension, angle of contact, excess pressure on a curved surface, applications of surface tension, concept of drop, bubble and capillarity.

11. Thermal properties of substances: Heat, temperature, thermal expansion, thermal expansion of solids, thermal expansion of liquids and gases, anomalous expansion of water, specific heat, heat capacity, C_P, C_V calorimetry, phase change, latent heat capacity.

Heat transfer: Conduction, convection, and radiation, thermal conductivity, qualitative analysis of black-body radiation, Wien's displacement law, Stefan's law, greenhouse effect.

12. Thermodynamics: Thermal equilibrium and definition of heat (zeroth law of thermodynamics), heat, work, and internal energy, first law of thermodynamics, isothermal and adiabatic processes, heat engines, and refrigerators.

13. Kinetic theory of gases - Equation of state of an ideal gas, work done in compression of a gas, kinetic theory of gases, postulates, concept of pressure, kinetic concept of temperature, root mean square speed of gas molecules, degrees of freedom, law of equal partition of energy, its application to specific heat capacity of gases, concept of mean free path, Avogadro's number.

14. Oscillations - periodic motion, time period, frequency, displacement, displacement as a function of time, periodic function, simple harmonic motion (SHM) and its equation, phase, oscillation of a spring, restoring force and force constant, energy in simple harmonic motion, kinetic and potential energy, simple pendulum, expression for time period of a simple pendulum. Free, forced and damped oscillations (qualitative description), resonance.

15. Waves - Wave motion, transverse and longitudinal waves, wave speed, displacement relations of progressive waves, principle of superposition of waves, reflection of waves, stationary waves, standing

waves in strings and air columns, normal modes and overtones, beats, Doppler effect.

16. Electric Charge and Field - Frictional electricity, electric charge, types of charges, electronic theory of generation of charge, conductors and insulators, gold leaf electroscope, charging by induction or electrostatic induction, basic properties of electric charge, Coulomb's law, dielectric constant, vector form of Coulomb's law, force between multiple charges (principle of superposition), comparison of electrostatic force and gravitational force, electric field, electric field intensity due to a point charge, electric force lines or field lines, electric field intensity due to a system of charges, continuous charge distribution, electric dipole, electric dipole moment, electric field due to an electric dipole, torque on an electric dipole placed in a uniform electric field, work done in rotating a dipole in an electric field, potential energy of a dipole in a uniform electric field, Vector area or area vector, electric flux, cubic angle, Gauss theorem, applications of Gauss theorem, derivation of Coulomb's law from Gauss's law.

17. Electrostatic potential and capacitance - Electrostatic potential energy, concept of electrostatic potential, earth's potential, potential at a point due to a point charge, electric potential due to a body of charges, potential at a point due to an electric dipole, factors affecting potential, relation between electric field intensity and electric potential, equipotential surface, potential inside a hollow conductor, electric potential energy of a system of charges, potential energy in an external field, conductors and insulators, electrostatics, electrostatic shielding, dielectrics and polarization, polarization of dielectrics, dielectric strength, capacitor and capacitance of a conductor, capacitance of a spherical conductor, factors affecting capacitance of a conductor, theory of capacitors, types of capacitors, capacitance of a parallel plate capacitor in the presence of a partially dielectric material. Capacitance of a capacitor,

electric displacement, combination of capacitors, energy of a charged capacitor, energy stored in a capacitor, potential of a dielectric medium, effect on electric capacitance and energy, redistribution of charges, loss of energy in redistribution of charges, distribution of charge on the surface of a conductor, action of pointed parts, Van de Graaff generator.

18. Current-Electricity - Electric current, drift velocity or drift velocity of free electrons, electric current and drift velocity, Ohm's law, resistance, specific resistance or resistivity, specific conductivity, effect of temperature on resistance and resistivity, color code of carbon resistance, combination of resistors, ohmic and non-ohmic resistance, superconductivity, thermal resistor or thermistor, Kirchhoff's law, Wheatstone bridge, meter bridge, heating effect of electric current, electrical energy, Joule's law for heat generation, electric power, electrical energy used in electrical circuits, power rate, chemical cell, primary cell, secondary cell, emf, difference between emf and potential difference, internal resistance of a cell, combination of cells ,Combination of cells with different emf , potentiometer, sensitivity of potentiometer, uses of potentiometer, comparing emf of two cells with the help of potentiometer, finding the internal resistance of a cell with the help of potentiometer, superiority of potentiometer over voltmeter.

19. Moving Charges and Magnetism - Concept of magnetic field, Oert's experiment, Ampere's law, rules for finding the direction of magnetic field, Biot-Savart's law, comparison of Biot-Savart's law and Coulomb's law, intensity of magnetic field produced by a straight current carrying wire (of infinite length), magnetic field due to a current carrying circular coil, magnetic field at the centre of a current carrying circular coil, magnetic field at the axis of a current carrying circular coil, magnetic field due to a current carrying solenoid, Ampere's circuital law, applications of

Ampere's circuital law, magnetic dipole moment of a revolving electron, force on a moving charge in a magnetic field: Lorentz force, work done by Lorentz force, force on a current carrying conductor in a magnetic field, units of magnetic field, force between two parallel current carrying conductors, cyclotron, torque on a current loop in a magnetic field, galvanometer, function of galvanometer Sensitivity, principle of shunt, conversion of galvanometer into ammeter, conversion of galvanometer into voltmeter.

20. Magnetism and magnetic properties of substances - molecular theory of magnetism, some evidence in favour of molecular theory of magnetism, distinction between magnetic substances and magnets, Coulomb's inverse square law, magnetic field intensity, magnetic moment, magnetic dipole and dipole moment, current loop as a magnetic dipole, magnetic dipole moment of an electron revolving as a magnetic dipole, magnetic lines of force, uniform magnetic field, force due to a magnetic dipole (or bar magnet), magnetic field intensity (axial and axial positions), torque on a bar magnet in a uniform magnetic field, work done in rotating a bar magnet in a uniform magnetic field and potential energy, magnetic field due to a current-carrying solenoid, magnetic field due to a current-carrying solenoid, some important terms to explain the magnetic properties of substances, magnetic properties of substances, Paramagnetic substances, diamagnetic substances, ferromagnetic substances, atomic model of magnetism, electromagnet, permanent magnet, hysteresis curve, terrestrial magnetism, geomagnetic elements, measurement of angle of declination, inclination , origin of earth's magnetic field, northern light.

21. Electromagnetic Induction - Magnetic flux, magnetic flux associated with a varying magnetic field, electromagnetic induction, Faraday's experiments related to electromagnetic induction, Faraday's laws of electromagnetic induction, kinetic emf from Faraday's laws, Lenz's law and Fleming's right hand rule, self-induction, self-inductance

for a long solenoid, expression for self-inductance of a plane circular coil, mutual induction, mutual inductance or coefficient of mutual induction, expression for mutual inductance between two long solenoids, mutual inductance between two plane circular coils, combination of two inductive coils, energy stored in inductance, relation between self-inductance and mutual inductance of two coils, eddy currents.

22. Alternating Current - Direct and Alternating Current, Alternating electomotive Force, some definitions, root mean square value, effective voltage or rms voltage, lead and lag in alternating current circuits, phasor diagram, resistance, reactance and impedance, different types of alternating current circuits, A.C. circuit having only ohmic resistance, A.C. circuit having only capacitance, A.C. circuit having only inductance, A.C. circuit having both resistance and capacitance, A.C. circuit having both resistance and inductance, A.C. circuit having both inductance and capacitance, A.C. circuit having all three inductance, capacitance and resistance, resonant circuit, sharpness of resonance: quality or characteristic coefficient, strength in alternating current circuit, wattless current, LC oscillations, dynamo, choke coil, transformer.

23. Electromagnetic waves - displacement current, electromagnetic waves, their production and difference from mechanical waves, brief history of electromagnetic waves, transverse nature of electromagnetic waves, characteristics of electromagnetic waves, electromagnetic spectrum.

24. Ray Optics and Optical Instruments - Reflection of light, laws of reflection, types of reflection, mirror, image, image formed by a plane mirror, spherical mirror, some definitions, rules for formation of images formed by spherical mirrors, position, magnitude and nature of the image of an object placed at different positions in front of a concave mirror, position, magnitude and nature of the image of an object placed in front

of a convex mirror, sign convention, relation between focal length and radius of curvature of a spherical mirror, mirror formula, linear magnification, parallax, concept of conjugate focus, spherical aberration, identification of mirrors, uses of concave and convex mirrors, refraction of light, denser and rarer mediums, laws of refraction, types of refractive index, cause of refraction, principle of reversibility of light, refraction of light through a glass slab, refraction of light in different mediums, apparent and actual depth, some examples of refraction in daily life, total internal Reflection, relation between critical angle and refractive index of a denser medium, some examples of total internal reflection, uses of total internal reflection, refraction of light on a spherical surface, sign convention, refraction on a convex surface, refraction on a concave surface, principal focus, lens, definitions, rules for construction of images formed by lenses, formation of an image by a convex lens, formation of an image by a concave lens, sign convention, refraction by a thin lens, dependence of focal length of a lens, lens formula, linear magnification, Newton's formula, combination of lenses, combined focal length of two thin lenses placed in contact, power of a lens, identification of lenses, uses of lenses, prism, refraction of light by a prism, angle of minimum deviation, formula for refractive index of a prism, dispersion of light, angular dispersion, dispersion power, Newton's experiment on dispersion of white light, spectrum, real and virtual spectrum, impure and pure spectrum, conditions for obtaining pure spectrum, reflection of light Dispersion, rainbow, human eye, angle of view and apparent size of an object, microscope, simple microscope, compound microscope, electron microscope, telescope, astronomical telescope or celestial telescope, terrestrial telescope, Galileo telescope, comparison of astronomical telescope and Galileo telescope, reflecting telescope.

25. Wave Optics - Nature of light, Huygen's wave theory, wavefront, Huygen's theory of secondary wavelets, Doppler effect, principle of

superposition of waves, interference of light, phase-related sources, conditions of permanent interference, Young's double-slit experiment, fringe width in Young's experiment, importance of Young's double-slit experiment, colours of thin films, diffraction of light, diffraction and Huygen's theory, diffraction of light by a straight edge, diffraction of light by a single slit, validity of ray optics - Fresnel distance, simple experiments demonstrating diffraction, comparative discussion of diffraction of sound and light, resolving power, polarization of light, demonstration of polarization in mechanical waves, representation of polarized and unpolarized light, experimental demonstration of polarization of light, plane of vibration and plane of polarization, origin of plane polarized light, polaroid, Melas's law.

26. Dual nature of radiation and matter - Elementary knowledge of electron and photon, electron-volt, work-function and electron emission, photoelectric effect, experimental study of photoelectric effect - Lenard's experiment, laws of photoelectric effect, Einstein's photoelectric equation - particle nature of light, determination of Planck's constant and work-function from Einstein's photoelectric equation, dual nature of radiation. De-Broglie waves or matter waves, experimental demonstration of matter waves - Davisson Germer's experiment.

27. Atom - Thomson's atomic model, Rutherford's α-particle scattering experiment, closest approach distance, collision parameter, Rutherford's atomic model, electron orbits, atomic spectrum, Bohr atomic model: postulates, Bohr's theory of hydrogen atom, energy levels of hydrogen atom, various spectral lines of hydrogen atomic spectrum, excitation potential and ionization potential, limitations of Bohr atomic model, fermion Hertz experiment, explanation of Bohr's second postulate by de Broglie, laser light.

28. Nucleus - Composition of nucleus, properties of nucleus, types of nuclei, atomic mass unit, Einstein's mass-energy relation, nuclear force, nucleus, mass loss and binding energy, radioactivity, causes of radioactivity, nature of Becquerel rays, properties of α-rays, β-rays and ϒ-rays, Soddy-Fajon's displacement law, radioactive decay law, half-life, activity of radioactive substances, average life or mean life of radioactive substances, radioactive decay, energy spectrum of β-particles, nuclear energy, nuclear fission, chain reaction in nuclear fission, thermal neutrons and moderators, nuclear reactors, nuclear fusion, source of energy in stars, nuclear holocaust.

29. Semiconductor Electronics:Materials, Devices and Simple Circuits - Classification of metals, conductors and semiconductors, energy bands in solids, classification of solids on the basis of energy bands, types of semiconductors, N-type semiconductors, P-type semiconductors, mobility of charge carriers, P-N junction diode, current flow in P-N junction diode, use of P-N junction diode as a rectifier, filter circuits, Zener diode, optoelectronic or photonic junction devices, junction transistors, modes of operation of transistors, working of transistors, characteristic curves, application of transistors as amplifiers, use of transistors as oscillators, use of transistors as switches, features and disadvantages of semiconductor devices, Boolean expressions, logic gates, combinations of basic gates, De-Morgan's theorem, universal gates, elementary concepts of ICs.

30. Communication System - Components of communication system, basic terminology used in electronic communication system, base band signal and bandwidth, bandwidth of transmission medium, propagation of electromagnetic waves and earth's atmosphere, role of ionosphere in radio wave propagation, propagation of radio waves, maximum distance

between sender and receiver, line of sight transmission, communication satellite, modulation and need of modulation, amplitude modulation, product of amplitude modulated wave, frequency modulation, demodulation or detection, antenna, FM receiver, fax, modem, internet, mobile telephony, global network system, line communication, double wire line, coaxial cable.

Chemistry

Part 1 - Physical Chemistry

1.Some Basic Concepts of Chemistry - General Introduction: Importance and scope of Chemistry, Nature of matter, laws of chemical combination, Dalton's atomic theory: concept of elements, atoms and molecules, atomic and molecular masses, mole concept and molar mass, percentage composition, empirical and molecular formula, chemical reactions, stoichiometry and calculations based on stoichiometry.

2.Structure of Atom - Discovery of Electron, Proton and Neutron, atomic number, isotopes and isobars. Thomson's model and its limitations. Rutherford's model and its limitations, Bohr's model and its limitations, concept of shells and subshells, dual nature of matter and light, de Broglie's relationship, Heisenberg uncertainty principle, concept of orbitals, quantum numbers, shapes of s, p and d orbitals, rules for filling electrons in orbitals - Aufbau principle, Pauli's exclusion principle and Hund's rule, electronic configuration of atoms, stability of half-filled and completely filled orbitals.

3.Classification of Elements and Periodicity in Properties - Significance of classification, brief history of the development of periodic table, modern periodic law and the present form of periodic table, periodic trends in properties of elements-atomic radii, ionic radii, inert gas radii, Ionization enthalpy, electron gain enthalpy, electronegativity, valancy, Nomenclature of elements with atomic number greater than 100.

4.Chemical Bonding and Molecular Structure - Valence electrons, ionic bond, covalent bond, bond parameters, Lewis structure, polar character of covalent bond, covalent character of ionic bond, valence bond theory, resonance, geometry of covalent molecules, VSEPR theory, concept

of hybridization, involving s, p and d orbitals and shapes of some simple molecules, molecular orbital theory of homonuclear diatomic molecules (qualitative idea only), Hydrogen bond.

5.Chemical Thermodynamics - Concepts of System and types of systems, surroundings, work, heat, energy, extensive and intensive properties, state functions. First law of thermodynamics - internal energy and enthalpy, heat capacity and specific heat, measurement of AU and AH, Hess's law of constant heat summation, enthalpy of bond dissociation, combustion, formation, atomization, sublimation, phase transition, ionization, solution and dilution. Second law of Thermodynamics (brief introduction), Introduction of entropy as a state function, Gibb's energy change for spontaneous and non- spontaneous processes, criteria for equilibrium, Third law of thermodynamics (brief introduction).

6.Equilibrium - Equilibrium in physical and chemical processes, dynamic nature of equilibrium, law of mass action, equilibrium constant, factors affecting equilibrium - Le Chatelier's principle, ionic equilibrium- ionization of acids and bases, strong and weak electrolytes, degree of ionization, ionization of poly basic acids, acid strength, concept of pH, hydrolysis of salts (elementary idea), buffer solution, Henderson Equation, solubility product, common ion effect (with illustrative examples).

7.Redox Reactions - Concept of oxidation and reduction, redox reactions, oxidation number, balancing redox reactions, in terms of loss and gain of electrons and change in oxidation number, applications of redox reactions.

8.Solutions - Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, Raoult's law, colligative properties - relative lowering of vapour pressure, elevation of boiling point, depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass, Van't Hoff factor

9.Electrochemistry - Redox reactions, EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells, Relation between Gibbs energy change and EMF of a cell, conductance in electrolytic solutions, specific and molar conductivity, variations of conductivity with concentration, Kohlrausch's Law, electrolysis and law of electrolysis

(elementary idea), dry cell-electrolytic cells and Galvanic cells, lead accumulator, fuel cells, corrosion.

10.Chemical Kinetics - Rate of a reaction (Average and instantaneous), factors affecting rate of reaction: concentration, temperature, catalyst; order and molecularity of a reaction, rate law and specific rate constant, integrated rate equations and half-life (only for zero and first order 10 reactions), concept of collision theory (elementary idea, no mathematical treatment), activation energy, Arrhenius equation.

Part II Inorganic Chemistry

1 d and f Block Elements - General introduction, electronic configuration, occurrence and characteristics of transition metals, general trends in properties of the first row transition metals - metallic character, ionization enthalpy, oxidation states, ionic radii, colour, catalytic property, magnetic properties, interstitial compounds, alloy formation, preparation and properties of K2Cr207 and KMnO4.

Lanthanides - Electronic configuration, oxidation states, chemical reactivity and lanthanide contraction and its consequences.

Actinides - Electronic configuration, oxidation states and comparison with lantha6nides

2.Coordination Compounds - Coordination compounds - Introduction, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds. Bonding, Werner's theory, VBT, and CFT; structure and stereoisomerism, importance of coordination compounds (in qualitative analysis, extraction of metals and biological system).

Part III Organic Chemistry

1.Organic Chemistry - Some Basic Principles and Techniques General introduction, methods of purification, qualitative and quantitative analysis, classification and IUPAC nomenclature of organic compounds. Electronic displacements in a covalent bond: inductive effect, electrometric effect, resonance and hyper conjugation. Homolytic and heterolytic fission of a

covalent bond: free radicals, carbocations, carbanions, electrophiles and nucleophiles, types of organic reactions.

2.Hydrocarbons - Aliphatic Hydrocarbons Alkanes - Nomenclature, isomerism, conformation (ethane only), physical properties, chemical reactions including free radical mechanism of halogenation, combustion and pyrolysis. Alkenes - Nomenclature, structure of double bond (ethene), geometrical isomerism, physical properties, methods of preparation, chemical reactions: addition of hydrogen, halogen, water, hydrogen halides (Markovnikov's addition and peroxide effect), ozonolysis, oxidation, mechanism of electrophilic addition. Alkynes Nomenclature, structure of triple bond (ethyne), physical properties, methods of preparation, chemical reactions: acidic character of alkynes, addition reaction of - hydrogen, halogens, hydrogen halides and water. Aromatic Hydrocarbons Introduction, IUPAC nomenclature, benzene: resonance, aromaticity, chemical properties: mechanism of electrophilic substitution. Nitration, sulphonation, halogenation, Friedel Craft's alkylation and acylation, directive influence of functional group in mono substituted benzene, carcinogenicity and toxicity.

3. Haloalkanes: Nomenclature, nature of C-X bond, physical and chemical properties, optical rotation mechanism of substitution reactions. Haloarenes: Nature of C-X bond, substitution reactions (Directive influence of halogen in monosubstituted compounds only). Uses and environmental effects of - dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT.

4.Alcohols, Phenols and Ethers - Alcohols: Nomenclature, methods of preparation, physical and chemical properties (of primary alcohols only), identification of primary, secondary and tertiary alcohols, mechanism of dehydration, uses with special reference to methanol and ethanol. Phenols: Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenols. Ethers: Nomenclature, methods of preparation, physical and chemical properties, uses

5.Aldehydes, Ketones and Carboxylic Acids - Aldehydes and Ketones: Nomenclature, nature of carbonyl group, methods of preparation, physical and chemical properties, mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes, uses.

Carboxylic Acids: Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.

6.Amines Amines: Nomenclature, classification, structure, methods of preparation, physical and chemical properties, uses, identification of primary, secondary and tertiary amines. Diazonium salts: Preparation, chemical reactions and importance in synthetic organic chemistry.

7.Biomolecules - Carbohydrates - Classification (aldoses and ketoses), monosaccahrides (glucose and fructose), D-L configuration oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen); Importance of carbohydrates. Proteins - Elementary idea of - amino acids, peptide bond, polypeptides, proteins, structure of proteins - primary, secondary, tertiary structure and quaternary structures (qualitative idea only), denaturation of proteins; enzymes. Hormones - Elementary idea excluding structure. Vitamins - Classification and functions. Nucleic Acids: DNA and RNA.

Biology

Diversity in the Living World.

1. The Living World- Biodiversity, Need for classification; three domains of life; taxonomy and systematics, concept of species and taxonomical hierarchy; binomial nomenclature

2. Biological Classification- Five kingdom classification: Salient features and classification of Monera, Protista and Fungi into major groups; Lichens, Viruses and Viroids.

3. Plant Kingdom- Classification of plants into major groups; Salient and distinguishing features and a few examples of Algae. Bryophyta, Pteridophyta, Gymnospermae Angiosperms. Plant Life Cycle and Alternation of Generations

4. Animal Kingdom- Salient features and classification of animals, non-chordates up to phyla level and chordates up to class level (salient features and at a few examples of each category).

Structural Organisation in Plants and animals

5. Morphology of Flowering Plants- Morphology of different parts of flowering plants: root, stem, leaf, inflorescence, flower, fruit and seed. Description of families: Solanaceae

6. Anatomy of Flowering Plants- Anatomy and functions of tissue systems in dicots and monocots.

"7. Structural Organisation in Animals- Morphology. Anatomy and functions of different systems (digestive, circulatory, respiratory, nervous

and reproductive) of frog."

Cell: Structure and Function

8. Cell-The Unit of Life- Cell theory and cell as the basic unit of life, structure of prokaryotic and eukaryotic cells; Plant cell and animal cell; cell envelope; cell membrane, cell wall; cell organelles structure and function; endomembrane system- endoplasmic reticulum, ribosomes, golgi bodies, lysosomes, vacuoles, mitochondria, plastids, microbodies, cytoskeleton, cilia, flagella, centrioles (ultrastructure and function); nucleus.

9. Biomolecules- Chemical constituents of living cells: biomolecules, structure and function of proteins, carbohydrates, lipids, nucleic acids; Enzymes properties, enzyme action.

10. Cell Cycle and Cell Division- Cell cycle, mitosis, meiosis and their significance

Plant Physiology

11. Photosynthesis in Higher Plants- Photosynthesis as a means of autotrophic nutrition; site of photosynthesis, pigments involved in photosynthesis (elementary idea); photochemical and biosynthetic phases of photosynthesis; cyclic and non-cyclic photophosphorylation; hemiosmotic hypothesis; photorespiration; C3 and C4 pathways; factors affecting photosynthesis.

12. Respiration in Plants- Exchange of gases; cellular respiration - glycosis, fermentation (anaerobic), TCA cycle and electron transport system (aerobic); energy relations number of ATP molecules generated; amphibolic pathways; respiratory quotient.

13. Plant-Growth and Development- Seed germination; phases of plant growth and plant growth rate; conditions for growth; differentiation, dedifferentiation and redifferentiation; sequence of developmental processes m a plant cell; growth regulators - auxin, gibberellin, cytokinin, ethylene, ABA.

Animal Physiology

14. Breathing and Exchange of Gases- Introduction to respiratory organs in animals, Respiratory system in humans; mechanism of breathing and its regulation in humans exchange of gases, transport of gases and regulation of respiration, respiratory volumes: disorders related to respiration asthma, emphysema, occupational respiratory disorders.

"15. Body Fluids and Circulation- Composition of blood, blood groups, coagulation of blood; composition of lymph and its function; human

circulatory system - Structure of human heart and blood vessels; cardiac cycle, cardiac output, ECG; double circulation, regulation of cardiac activity; disorders of circulatory system-hypertension, coronary artery disease, angina pectoris, heart failure."

"16. Excretory Products and their Elimination- Modes of excretionammonotelism, ureotelism, uricotelism; human excretory system-structure and function, urine formation, osmoregulation; regulation of kidney function angiotensin, atriai natriuretic factor, ADH, diabetes insipidus, micturition; role of other organs in excretion; disorders - uremia, renal

failure, renal calculi, nephritis, dialysis and artificial kidney, renin kidney transplant"

17. Locomotion and Movement- Types of movement amoeboid, ciliary, flagellar, muscular, skeletal muscle, contractile proteins and muscle contraction, skeletal system and its functions; joints; disorders of muscular and skeletal systems-myasthenia gravis, tetany, muscular dystrophy, arthritis, osteoporosis, gout.

18. Chemical Coordination and Integration- Endocrine glands and hormones; human endocrine system hypothalamus, pituitary, pineal, thyroid, parathyroid, thymus, adrenal, pancreas, gonads, hormones of heart, kidney and gastrointestinal tract, mechanism of hormone action (elementary idea); role of hormones as messengers and regulators, hypo and hyperactivity and

related disorders; dwarfism, acromegaly, cretinism, goiter, exophthalmic goiter, diabetes, Addison's disease.

19. Neural Control and Coordination- Neuron and nerves; Nervous system in humans central nervous system and peripheral nervous system; generation and conduction of nerve impulse; visceral nervous system.

Reproduction

20. Sexual Reproduction in Flowering Plants- Flower structure, development of male and female gametophytes; pollination types, agencies and examples; outbreeding devices, pollen-pistil interaction; double fertilization; post fertilization events development of endosperm and embryo, development of seed and formation of fruit; special modesapomixis, parthenocarpy, polyembryony: Significance of seed dispersal and fruit formation.

21. Human Reproduction- Male and female reproductive systems; microscopic anatomy of testis and ovary, gametogenesis -spermatogenesis and oogenesis, menstrual cycle; fertilisation, embryo development up to blastocyst formation, implantation, pregnancy and placenta formation, parturition, lactation

22. Reproductive Health- Need for reproductive health and prevention of Sexually Transmitted Diseases (STDs); birth control need and methods; medical termination of pregnancy (MTP); amniocentesis; infertility and assisted reproductive technologies IVF, ZIFT, GIFT

Genetics and Evolution

23. Principles of Inheritance and Variation - Heredity and variation, Mendelian inheritance; deviations from Mendelism incomplete dominance, co-dominance, multiple alleles and inheritance of blood groups, pleiotropy, elementary idea of polygenic inheritance; chromosome theory of inheritance; chromosomes and genes, linkage and crossing over: Sex determination in human being, birds and honey bee; sex linked inheritancehaemophilia.colour blindness; Mendelian disorders in humansthalassemia: chromosomal disorders in humans: Down's syndrome. Turner's and Klinefelter's syndromes,

24. Molecular Basis of Inheritance- Structure of DNA and RNA, DNA packaging: Search for genetic material and DNA as genetic material: DNA replication; Central Dogma; transcription, genetic code, translation; gene expression and regulation - lac operon, Human genome project, DNA fingerprinting.

25. Evolution - Origin of life; biological evolution and evidences for biological evolution (paleontology. comparative anatomy, embryology and molecular evidences); adaptive radiation, Darwin's theory of evolution; mechanism of evolution variation (mutatior and recombination) and natural selection with examples, types of natural selection; Gene flow and genetic drift, Hardy-Weinberg's principle; human evolution

Biology in Human Welfare

26. Human Health and Diseases - Pathogens; parasites causing human diseases (malaria, dengue, chikungunya, filariasis, ascariasis, typhoid, pneumonia, common cold, amoebiasis, ring worm) and their control; Basic concepts of immunology-vaccines, cancer, HIV and AIDS; Adolescencedrug and alcohol abuse.

"27. Microbes in human- Microbes in domestic products, microbes in industrial Products, microbes in antibiotic production, Microbes. as bio

fertilizers, Contribution of microbes in substances cycling, microbes in biogas production, microbes in sewage treatment, microbes as biological Control agents"

Biotechnology

28. Biotechnology- Principles and Processes- Genetic Engineering (Recombinant DNA Technology).

29. Biotechnology and its Application - Application of biotechnology in health and agriculture: genetically modified organisms - Bt crops, Human insulin, gene therapy, molecular diagnosis; transgenic animals, biosafety issues, biosafety and patents.

Ecosystem

30. Organisms and Populations - Population interactions mutualism, competition, predation, parasitism, commensalism, population attributes - growth, birth rate and death rate, age distribution.

31. Ecosystem - Ecosystem, productivity and decomposition; energy flow; pyramids of number, biomass, energy.

32. Biodiversity and Conservation - Biodiversity Concept, levels, patterns, importance, loss of biodiversity; biodiversity conservation; hotspots, endangered organisms, extinction, Red Data Book, Sacred Groves, Biosphere reserves, national parks, wildlife, sanctuaries and Ramsar sites.

33. Environmental Issues - Air Pollution, Water Pollution, solid waste, solid waste management, radio active fall outs, dirt or dirt bombs, noise pollution, soil Pollution, global Environmental change, acid rain.

सामान्य हिन्दी **(05 Marks)**

1. स्वर, व्यंजन, वर्तनी
2. लिंग, वचन, काल
3. संज्ञा, सर्वनाम, विशेषण, क्रिया, क्रिया विशेषण, कारक
4. समास रचना एवं प्रकार
5. संधि- स्वर, व्यंजन एवं विसर्ग संधि
6. रस व अलंकार, दोहा, छंद, सोरठा
7. व्याकरणिक अशुद्धियाँ
8. शब्द रचना उपसर्ग एवं प्रत्यय
9. शब्द प्रकार, तत्सम तदभव, देशज, विदेशी
10. पर्यायवाची, विलोमार्थी, अनेकार्थी शब्द, अनेक शब्दों या वाक्यांश के लिए एक शब्द
11. मुहावरे व लोकोक्तियां

General English **(05 Marks)**

UNIT-1 ENGLISH GRAMMAR-

1. Number, Gender, Articles
2. Pronoun, Adjectives, Verb, Adverb
3. Use of some important Conjunctions
4. Use of some important preposition

UNIT-2 TRANSFORMATION OF SENTENCES

1. Active/Passive Voice
2. Direct/Indirect Narration

UNIT-3 VOCABULARY

1. Synonyms/Antonyms
2. One word substitution
3. Spellings
4. Proverb, Idioms and phrases

General Studies

General Mental Ability (05 Marks)

Reasoning, seeing relationships, analogies, numerical ability, spatial relationships, etc.

To test these factors, questions are generally asked like: spotting odds, numerical series, letter series, seeing relationships between letters, numbers and pictures, symbolic language, hidden pictures, squares and numbers, mathematical operations, matching pictures, various types of cube patterns, etc.

Computer Education (05 Marks)

- **Introduction to Computers:** What is a computer?, Uses of computers in daily life (education, banking, healthcare, office work, communication, etc.), Importance and limitations of computers, General characteristics of computers.

- **Major Components of a Computer:** Introduction to hardware and software, CPU (Central Processing Unit), ALU, CU, Memory, Input devices (keyboard, mouse, scanner, touchpad, etc.), Output devices (monitor, printer, speakers, etc.).
- **Types of Printers** : Inkjet printers, LaserJet printers, Dot Matrix printers, Thermal and other modern printers.
- **Operating Systems:** Role of an operating system, MS-DOS, Commercial operating systems (Windows, macOS, etc.), Open-source operating systems (Linux, Ubuntu, etc.).
- **Microsoft Office for Office Use:** MS Word – Creating, editing, and formatting documents.MS Excel – Tables, formulas, and charts.MS PowerPoint – Slide creation, design, and presentations.
- **Use of the Internet:** Introduction to the Internet, Inbox, Outbox, CC, BCC, Creating and sending emails, Searching online documents, Website browsing, General knowledge of various government department websites.
- **Antivirus and Computer Security:** What is a computer virus?
    - Types of viruses, Damages caused by viruses, Importance of antivirus software, Safety and security measures.
- **Use of Multimedia:** Meaning of multimedia, Use of audio, video, and text, Applications of multimedia.
- **Storage Devices:** Primary and secondary storage, Hard disk, pen drive, CD/DVD, Introduction to cloud storage.
- **Search Engines and Online Platforms:** Google, YouTube,
    - What is a search engine? How to search for required information? Safe and effective searching techniques.

General Knowledge **(05 Marks)**

22. Major Constitutional Provisions, Fundamental duties and rights under the Indian Constitution, Indian political system and constitutional rights, Right to Information (RTI), Cultural and national personalities, Democracy and elections, Lok Sabha and Rajya Sabha.

23. Indian History and National Movement, Indian civilization and culture, Historical events ,History of Indian independence from 1857 to 1947, Events that occurred after 1947.
24. Geography: Basic geography ,Geography of India and the World.
25. Indian Economy: Social and economic development, Population perspective, Gross National Product (GNP) and per capita income, Five-Year Plans, Agriculture and rural development, Industrial development, Indian economy and banking system, Current economic events
26. General Science: Basic concepts related to physics, chemistry, biology, and botany
27. General Knowledge of Chhattisgarh: History of Chhattisgarh, Geography of Chhattisgarh, Political system, Economy, Government schemes, Awards and honors, Traditions, folk songs and music, Important personalities, Other important topics related to Chhattisgarh.
28. National Education Policy (NEP) 2020.