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**Scheme and Syllabus for Computer Based Test (CBT) for the selection of  
Junior Teachers (Schematic): Category-I (Class-I to V)**

| Paper   | Area of Content                                      | No. of Questions | Marks      | Duration                   |
|---------|------------------------------------------------------|------------------|------------|----------------------------|
| Part-I  | General English                                      | 10               | 20         | 150 Min.<br>(2Hrs.30 Min.) |
|         | General Odia                                         | 10               | 20         |                            |
|         | General Knowledge & Current Affairs                  | 10               | 20         |                            |
|         | Reasoning Ability                                    | 10               | 20         |                            |
|         | Computer Literacy                                    | 05               | 10         |                            |
|         | Child Development, Learning, Curriculum & Assessment | 15               | 30         |                            |
|         | <b>Total</b>                                         | <b>60</b>        | <b>120</b> |                            |
| Part-II | Subject Contents                                     | 40               | 80         |                            |
|         | Pedagogy                                             | 20               | 40         |                            |
|         | <b>Total</b>                                         | <b>60</b>        | <b>120</b> |                            |
|         | <b>Grand Total</b>                                   | <b>120</b>       | <b>240</b> |                            |

**Note :**

- All the questions will be of MCQ type carrying two marks each.
- 02 marks will be awarded for each correct answer and 0.5 marks will be deducted for each incorrect answer.
- Part-I & II are compulsory for both the teachers of Science & Arts for Class-I to V.

**In Part-II**

- Mathematics - 20 marks (10 questions) from Content + 10 marks (05 questions) from pedagogy
- Environmental Science -20 marks(10 questions) from Content + 10 marks (05 questions) from pedagogy
- Odia/Urdu/Hindi/Telugu/Bengali - 20 marks (10 questions) from Content + 10 marks (05 questions) from pedagogy, optional for student
- English – 20 marks (10 questions) from Content + 10 marks (05 questions) from pedagogy
- Questions of non-language subjects will be bilingual in nature.
- The questions may be up to Secondary / 10<sup>th</sup> level and as per the prescribed syllabus.

**Part-I**  
**(Total Marks – 120)**

[ General English, Odia, General Knowledge and Current Affairs, Reasoning Ability, Computer Literacy and Child development, Curriculum, Learning & Assessment ]

**General English** (20 Marks)

- Questions on comprehension, inference & grammar from one unseen passage.
- Questions on comprehension, appreciation from a Poem

**General Odia** (20 Marks)

- Questions on comprehension, inference & grammar from one unseen passage.
- Questions on comprehension, appreciation from a Poem

**General Knowledge and Current Affairs** (20 Marks)

- Current events of state (Odisha), national and international importance
- History of Odisha / India
- Indian and World Geography
- Indian Polity
- Economic and Social Development
- Everyday Science

**Reasoning Ability** (20 Marks)

- General mental ability
- Logical reasoning and analytic ability
- Basic numeracy.
- Decision making & Problem solving.

**Computer Literacy** (10 Marks)

- Basic computer literacy skills for use of ICT in classrooms
- Concepts, terminology and operations relating to general computer usage
- Basic hardware of computer.
- Common applications
- Networking and internet

**Child Development, Learning, Curriculum & Assessment** (30 Marks)

**Unit-1 : Understanding Child Development.**

- Concept, principles and stages of child development
- Characteristics of physical, cognitive, social, emotional and moral development in childhood and early adolescence
- Significance of heredity and environment in understanding the child
- Factors influencing child development – home, school, peer-group and society
- Understanding the developmental needs of children (age-specific) Learning and developmental tasks, developmental delays, helping children to grow.

## **Unit-2 : Understanding Learning Process**

- Learning - concept and nature, individual differences in learning
- Understanding how child learns –learning through observation, imitation, trial and error, experimentation and experience
- Learning as meaning - making
- Basic conditions of learning - maturation, fatigue, reinforcement, materials, tasks, organization of materials
- Promoting learning - motivating learner, facilitating classroom learning environment, teacher behavior.

## **Unit-3 : Learner in Inclusive Context**

- Meaning of inclusive education; distinction from integrated education and special education
- Implementation of Inclusive Education
- Education of CWSN – types, identification, learning needs, teaching strategies and curriculum adaptation
- Education of girl child – issues and strategies to address, initiatives taken so far
- Education of socio – culturally disadvantaged children

## **Unit-4 :**

- Right to Education (RTE)
- Child Right & Child Abuse

## **Unit-5 : Curriculum**

- Concept and Types –subject centered, child centered, experience centered, local – specific
- Core Curriculum – meaning and features
- Principles of curriculum construction.
- Process of curriculum development at the elementary school level.

## **Unit-6 : Process of Curriculum Transaction**

- Guiding principles for curricular transaction : NCF - 2005
- Specifying objectives of curriculum in the learners context
- Selection and organization of learning activities and experiences
- Skills for classroom transaction – questioning skills, communication Skills, blackboard writing skills, providing reinforcement, classroom movement

## **Unit-7 : Approaches to Learning and Teaching**

- Teacher centered, learner centered and learning centered approaches
- Competency based approach
- Activity based approach
  - Activity and its elements
  - Characteristics of activity
  - Varieties of Activity (Curricular and other - curricular)

- Constructivist approach to learning
- Major issues associated with each approach

#### **Unit-8 : Learning Assessment**

- Concept of measurement, evaluation and assessment
- Continuous and comprehensive assessment
- Tools and techniques of assessment – achievement test, observation, interview, rating scale, check list, case study, questionnaire, project
- Preparation of different types of test items
- Portfolio assessment
- Preparation of unit test
- Recording, reporting and sharing of assessment results.
- Use of assessment outcomes for improving learning

**Part-II**  
**(Total Marks – 120)**

**LANGUAGE (ODIA/URDU/HINDI/TELUGU/BENGALI) (30 Marks)**

**(PEDAGOGY – 10 Marks)**

**Unit- 1: Learning Odia/Urdu/Hindi/Telugu/Bengali at Elementary Level (Class I to V)**

- Aims and objectives of teaching Odia / Urdu / Hindi/Telugu /Bengali as mother tongue
- Principles of language teaching
- Acquisition of four-fold language skills in Odia/Urdu /Hindi/Telugu/ Bengali viz., listening, speaking, reading and writing
- Interdependence of four language skills
- Objectives and strategies of transacting integrated text for the beginners.

**Unit- 2 : Teaching , Reading and Writing Skills**

- Techniques of developing intensive and extensive reading skills.
- Teaching – learning composition and creative writing
- Critical perspective on the role of grammar in learning language for communicating ideas in written form.
- Challenges of teaching language in a diverse classroom, language difficulties and errors.

**(CONTENTS – 20 marks)**

**Unit- 3 : Language items**

- Part of speech – Noun, Pronoun, verb, Adverb, Adjective, Conjunction
- Formation of word – using prefix and suffix
- Synonym and antonym
- Phrase and idiom

**LANGUAGE (ENGLISH) (30 Marks)**

**(PEDAGOGY – 10 marks)**

**Unit- 1: Learning English at Elementary Level (Class I to V)**

- Importance of learning English
- Objectives of learning English (in terms of content and competence specifications)

**Unit- 2: Language Learning**

- Principles of language teaching
- Challenges of teaching language in a diverse classroom

**Unit- 3: Skills in learning English**

- Four-fold basic skills of learning viz., listening, speaking, reading and writing: interdependence of skills.

- Techniques and activities for developing listening and speaking skills - recitation , storytelling, dialogue
- Development of reading skills: reading for comprehension, techniques and strategies for teaching reading – phonic, alphabet, word, sentence and story
- Development of writing skills - teaching composition

**(CONTENTS-20 Marks)**

**Unit- 4: Language items**

- Noun, Adverb, Verb, Tense and Time, Preposition, Article, Adjective, Punctuation.

**MATHEMATICS**

**(30 Marks)**

**(PEDAGOGY – 10 Marks)**

**Unit- 1: Mathematics Education in Schools**

- Nature of mathematics (exactness, systematic, pattern, preciseness)
- Aims and objectives of teaching mathematics.
- Specific objectives of teaching mathematics

**Unit- 2 : Methods and Approaches to Teaching - Learning Mathematics**

- Methods : Inductive, deductive, analysis, synthesis, play-way
- Approaches : Constructivist and Activity-based

**(CONTENT – 20 Marks)**

**Unit- 3: Number systems and operation in numbers**

- Number system – natural, whole, rational, real
- Fundamental operation on numbers
- Fractional operation on numbers
- Fractional numbers and decimals - operations in fractional numbers and decimals.
- Factors and multiples - HCF and LCM
- Percentage and its application.

**Unit- 4 : Measurement**

- Measurement of length, weight, capacity
- Measurement of area and perimeter of rectangle and square
- Measurement of time - concept of a.m. , p.m. and time interval

**Unit- 5 : Shapes and Spatial Relationship**

- Basic geometric concepts – point, line segment, ray , straight line, angles
- Geometry of triangles, quadrilaterals and circles
- Symmetry
- Geometrical solids – cube, cuboids , sphere , cylinder ,cone

**Unit- 6 : Data Handling and patterns**

- Pictography , bar graph ,histogram, pie chart
- Interpretation of these graphs
- Patterns in numbers and figures

## ENVIRONMENTAL STUDIES (EVS)

(30 Marks)

### (PEDAGOGY -10 Marks)

#### Unit- 1 : Concept

- Concept and significance
- Integration of science and social science
- Aims and objectives of teaching and learning EVS

#### Unit- 2 : Methods and Approaches

- Basic principles of teaching EVS
- Methods : Survey, Practical work, discussion, observation, project
- Approaches : activity - based, theme - based

### (CONTENT - 20 marks)

#### Unit- 3 : Governance

- Local – Self, Government - State and Central
- Judiciary

#### Unit- 4 : Physical Features of Odisha and India

- Landscape
- Climate
- Natural resources
- Agriculture and Industry
- Disaster management

#### Unit- 5 : History of Freedom Struggle in India and Odisha

#### Unit- 6 : Health and Diseases

- Nutritional elements and balanced diet
- Nutritional deficiency and diseases
- Waste materials and disposal
- First - aid
- Air and water pollution

#### Unit- 7 : Internal Systems of Human Body

- Respiratory, circulatory, digestive and excretory system – structure and parts of plant - structure and function.

#### Unit- 8 : Matter, Force and Energy

- Matter and its properties
- Earth and sky, effect of rotation and revolution of Earth
- Work and energy



**Scheme and Syllabus for Computer Based Test (CBT) for the selection of Junior Teachers (Schematic): Category-II(Class-VI to VIII)**

| Paper   | Area of Content                         | No. of Questions | Marks      | Duration                   |
|---------|-----------------------------------------|------------------|------------|----------------------------|
| Part -I | General English                         | 10               | 20         | 150 Min.<br>(2Hrs.30 Min.) |
|         | General Odia                            | 10               | 20         |                            |
|         | General Knowledge & Current Affairs     | 10               | 20         |                            |
|         | Reasoning Ability                       | 10               | 20         |                            |
|         | Computer Literacy                       | 05               | 10         |                            |
|         | Child Development, Learning, Curriculum | 15               | 30         |                            |
|         | <b>Total</b>                            | <b>60</b>        | <b>120</b> |                            |
| Part-II | Subject Contents                        | 36               | 72         |                            |
|         | Pedagogy                                | 24               | 48         |                            |
|         | <b>Total</b>                            | <b>60</b>        | <b>120</b> |                            |
|         | <b>Grand Total</b>                      | <b>120</b>       | <b>240</b> |                            |

**Note :**

- Part –I is compulsory for both the streams i.e.; Science and Arts.
- Part-II contains the syllabus for both Science and Arts streams separately. Candidates have to opt for either of the Streams.
- All the questions will be of MCQ type carrying Two Marks each.
- 02 marks will be awarded for each correct answer and 0.5 marks will be deducted for each incorrect answer.
- The contents of Arts Stream include Language -I (Odia/Urdu/Hindi/Telugu/Bengali), Language -II (English), History & Civics and Geography.
- The contents of the Science Streams include Mathematics, Physical Science and Life Science.
- Questions of non-language subjects will be of bilingual in nature.
- The questions may be up to Higher Secondary (+2) level and as per the prescribed syllabus

**For Arts Stream**

In Part – II

- Odia/Urdu/Hindi/Telugu/Bengali (24 Marks from Content + 16 Marks from Pedagogy)
- English (24 Marks from Content + 16 Marks from Pedagogy)
- History & Civics and Geography (24 Marks from Content + 16 Marks from Pedagogy)

**For Science Stream**

In Part – II

- Mathematics (24 Marks from Content + 16 Marks from Pedagogy)
- Physical Science (24 Marks from Content + 16 Marks from Pedagogy)
- Life Science ((24 Marks from Content + 16 Marks from Pedagogy)



**Part – I**  
**(Total marks -120)**

[ General English, Odia, General Knowledge and Current Affairs, Reasoning Ability, Computer Literacy, Child Development, Learning and Curriculum]

**General English**

**(20 Marks)**

- Questions on comprehension, inference & grammar from one unseen passage.
- Questions on comprehension, appreciation of a Poem

**General Odia**

**(20 Marks)**

- Questions on comprehension, inference & grammar from one unseen passage.
- Questions on comprehension, appreciation from a Poem

**General Knowledge and Current Affairs**

**(20 Marks)**

- Current events of state (Odisha), national and international importance
- History of Odisha / India
- Indian and World Geography
- Indian Polity
- Economic and Social Development
- Everyday Science

**Reasoning Ability**

**(20 marks)**

- General mental ability
- Logical reasoning and analytic ability
- Basic numeracy.
- Decision making & Problem solving

**Computer Literacy**

**(10 Marks)**

- Basic computer literacy skills for use of ICT in classrooms
- Concepts, terminology and operations relating to general computer usage
- Basic hardware of computer.
- Common applications
- Networking and internet

## **Child development, Learning, Curriculum**

**(30 Marks)**

### **Unit-1 : Understanding Child Development**

- Concept, principles and stages of child development
- Characteristics of physical, cognitive, social, emotional and moral development in childhood and early adolescence
- Significance of heredity and environment in understanding the child
- Factors influencing child development – home, school, peer-group and society
- Understanding the developmental needs of children (age-specific)
- Learning and developmental tasks, developmental delays, helping children to grow.

### **Unit-2 : Understanding Learning Process**

- Learning – concept and nature, individual differences in learning
- Understanding how child learns –learning through observation, imitation, trial and error, experimentation and experience
- Learning as meaning –making
- Basic conditions of learning – maturation, fatigue, reinforcement, materials, tasks, organization of materials.
- Promoting learning – motivating learner, facilitating classroom learning environment, teacher behavior

### **Unit-3 : Learner in Inclusive Context**

- Meaning of inclusive education; distinction from integrated education and special education
- Implementation of Inclusive Education
- Education of CWSN – types, identification, learning needs, teaching strategies and curriculum adaptation.
- Education of girl child – issues and strategies to address, initiatives taken so far.
- Education of socio – culturally disadvantaged children

### **Unit-4 :**

- Right to Education (RTE)
- Child Right & Child Abuse

### **Unit-5 : Curriculum**

- Concept and Types –subject centered, child centered, experience centered, local – specific
- Core Curriculum – meaning and features
- Principles of curriculum construction.

- Process of curriculum development at the elementary school level.

#### **Unit-6 : Process of curriculum Transaction**

- Guiding principles for curricular transaction :NCF – 2005
- Specifying objectives of curriculum in the learners context
- Selection and organization of learning activities and experiences
- Skills for classroom transaction – questioning skills, communication skills, blackboard writing skills, providing reinforcement, classroom movement

#### **Unit-7 : Approaches to Learning and Teaching**

- Teacher centered, learner centered and learning centered approaches
- Competency-based approach
- Activity based approach
  - Activity and its elements.
  - Characteristics of activity
  - Varieties of Activity (Curricular and other –curricular)
- Constructivist approach to learning
- Major issues associated with each approach

## **Part-II**

(Total Marks-120)

### **ARTS STREAM**

**LANGUAGE-I: (ODIA/ URDU/HINDI/TELUGU/BENGALI)**

**(40 marks)**

**(PEDAGOGY-16 marks)**

#### **Unit-1: Learning Odia/Urdu/Hindi/Telugu/Bengali at Upper Primary Level**

- Aims and objectives of learning Odia / Urdu / Hindi / Telugu /Bengali as first Language
- Principles of teaching mother tongue
- Development of Language skills- listening, speaking, reading and writing

#### **Unit-2: Teaching Language**

- Intensive and extensive reading skills at upper primary level
- Teaching of non-detailed and detailed texts (prose, poetry)
- Teaching of composition and creative writing
- Teaching of grammar
- Challenges of teaching Odia/Urdu/Hindi/Telugu/Bengali in multi-lingual context

#### **Unit-3: Assessment of Language**

- Assessment of learning Odia/Urdu/Hindi/Telugu/Bengali languages- listening, speaking, reading and writing
- Planning and designing achievement tests and other tools for assessment

**(CONTENT-24 marks)**

#### **Unit-4: Elements of Odia/Urdu/Hindi/Telugu/Bengali language**

- Comprehension of two unseen passages (one from prose / drama and other from poem) with test items on comprehension, vocabulary and grammar

#### **Unit-5: Language Items**

- Parts of speech-noun, pronoun, verb, adverb, adjective, conjunction
- Formation of word-prefix and suffix
- Vocabulary-spelling and meaning of synonym and antonym
- Phrase and idiom

**Unit-6: Contribution of famous literates for development of Odia/Urdu/Hindi/Telugu/Bengali language**

- Odia-Fakir Mohan Senapati, Gangadhar Meher, Radhanath Ray, Surendra Mohanty, Gopinath Mohanty
- Urdu-Altaf Hussain Hali, Niaz Fatepuri, Ali SadarJafri, Aamir Khusroo, Majrooh Sultanpuri
- Hindi-Bharatendu Harischandra, Mahavir Prasad Dwivedy, Prem Chand, Jayashankar Prasad, Suryakanta Tripathy Nirala.
- Bengali- Rabindranath Tagore, Sarat Chandra Chottopadhaya, Tarasankar Bandopadhyay, Kzi Nazrul Islam, Bibhuti Bhusan Bandopadhyay
- Telugu-Srinanthadu, Gurajuda Appa Rao, Kandukuri Veeresalingam, Arudra, C. Narayan Reddy

**LANGUAGE-II: (ENGLISH)**

**(40 marks)**

**(PEDAGOGY-16 marks)**

**Unit-1: Learning English at Upper Primary level**

- Importance of learning English
- Objectives of learning English

**Unit-2: Development of English language skills**

- Basic skills of language –listening, speaking, reading writing & interdependence of skills
- Teaching of prose, poetry and composition
- Teaching of creative writing
- Principles of language teaching
- Challenges of teaching English as second language at upper primary level

**Unit-3: Assessment of learning English Language**

- Assessment of comprehension and language skills-listening, speaking, reading and writing.

**(CONTENT-24 marks)**

**Unit-4: Comprehension**

- Two unseen passages-one from prose / drama and another from poem with questions on comprehension, grammar

#### **Unit-5: language Items**

- Parts of speech- tense, voice change, change of narration, use of article & use of punctuation mark
- Vocabulary – meaning and spelling

### **SOCIAL STUDIES**

**(40 marks)**

**(PEDAGOGY-16 marks)**

#### **Unit-1: Aims and objectives of Teaching Social Studies**

- Importance of teaching – learning Social Science at Upper Primary Stage
- Aims and objectives of teaching - learning Social Science
- Specific objectives of teaching - learning Social Science

#### **Unit-2- : Methods and Approaches**

- Methods : Survey , field work/trips, project & group work
- Approaches : Activity – based, theme –based

#### **Unit-3- : Evaluation in Social Science**

- Tools and techniques for assessment of learning in Social Science
- Diagnostic assessment and remedial teaching

**(CONTENTS-24 marks)**

#### **Unit-4- : History and Political Science**

- Methods of historical studies, social, economic and political conditions of Sultanate, Moghul and British period
- Slave, Khiligi, Tughlaq, Lodi Dynasty
- East India Company, British Crown, Impact of British rules, Ancient Period, Kharabela, Ashoka.
- Soma, Ganga, Surya, fall of Odisha, Odisha under Moghuls
- Nationalist movement in India
- Development of Nationalism in India and Europe

#### **Unit-5- : Political Science**



- Indian Constitution
- Human Rights
- Governance at Central, State and Local level
- Political Parties and Pressure group

#### **Unit-6- : Geography**

- Odisha Geography-physical features, climate, agriculture and industry
- Natural resources- land, water, forest & wild animals, minerals
- Atmosphere, biosphere and hydrosphere
- Earth-crust, internal structure, landscape-hills & mountains, plateau, plains, rivers
- Temperature zones of earth

### **SCIENCE STREAM**

#### **MATHEMATICS**

**(40 Marks)**

**(PEDAGOGY-16 marks)**

#### **Unit-1: Mathematics at Upper Primary Stage**

- Nature of Mathematics-logical, systematic, abstractions, pattern, mathematical language
- Aims and objectives of teaching Mathematics
- Specific objectives of teaching Mathematics

#### **Unit-2- : Methods and Approaches to Teaching- Learning Mathematics**

- Methods : Induction, deduction, analysis and synthesis
- Approaches : Constructivist and Activity – based

#### **Unit-3- : Evaluation in Mathematics**

- Formal and informal evaluation
- Error analysis
- Remedial and enrichment programmes

**(CONTENTS-24 marks)**

#### **Unit-4- : Number systems**

- Number System (focus on real and rational numbers)
- Properties in different number system

#### **Unit-5- : Algebra**

- Basic concepts-terms, co-efficient, powers
- Algebraic equations and their applications with one variable
- Polynomials-operations in polynomials
- Laws of indices
- Identities

#### **Unit-6- : Commercial Arithmetic**

- Percentage and its application-profit and loss, simple and compound interest, banking, rebate
- Ratio and proportion
- Variation and its application
- Square, square root, cube, cube root of natural numbers

#### **Unit-7- : Shapes and Spatial Relationship**

- Triangles and Quadrilaterals
- Angles, complementary and supplementary angles, opposite angles, exterior angles of the triangle
- Angle sum property
- Parallel lines and properties relating to parallel lines
- Congruency and similarities
- Mensurations-area and circumference of circle , higher order problems relating to area of Square, Triangle, Rectangle, Parallelogram, Trapezium, Pythagorean theorem,

**(PHYSICAL SCIENCE - 40 marks)**

**(PEDAGOGY-16 marks)**

#### **Unit-1- : Nature of Science**

- Aims and objectives of teaching-learning science at upper primary stage

#### **Unit-2- : Methods and Approaches**

- Methods : Observation , Experimentation, Discovery, Project and Problem - solving
- Approaches : Integrated, constructivists approach

#### **Unit-3- :Evaluation in Science**

- Tools and techniques for assessing learning in Science

**(CONTENTS -24 marks)**

**Unit-4- :Physical Science**

- Metal, Non-metal and Metalloid
- Elements and compounds
- Symbol, valence and chemical equation
- Acid, Base and Salt
- Physical and Chemical changes in Matters
- Force, motion , friction, pressure in solid, liquid & gases
- Electricity and Current , chemical effects of electric current
- Refraction and Reflection of light
- Solar System and Planets

**(LIFE SCIENCE -40 marks)**

**(PEDAGOGY-16 marks)**

**Unit-1- :Nature of Science**

- Aims and objectives of teaching learning science at upper primary level

**Unit-2- : Method and Approaches**

- Methods : Observation , Experimentation, Discovery, Project and Problem –solving
- Approaches : Integrated approach, constructivists approach.

**Unit-3- : Evaluation in science**

- Tools and techniques for assessing learning in science

**(CONTENTS -24 marks)**

**Unit-4- : Life Science**

- Biological adaptation among living beings
- Respiration and transpiration
- Soil and forest resource
- Cell structure and function of cell organelle
- Micro-organisms
- Adolescence in human being

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