I. CHILD DEVELOPMENT AND PEDAGOGY (Marks: 30)

1. DEVELOPMENT OF CHILD
   - Development, Growth & Maturation - Concept & Nature
   - Principles of development & their implications
   - Factors influencing Development - Biological, Psychological, Sociological
   - Understanding Development - Piaget, Kohlberg, Chomsky, Carl Rogers and Erikson
   - Individual differences - Intra & Inter Individual differences in the areas of Attitudes, Aptitude, Interest, Habits, Thinking (Divergent & Convergent), Intelligence and their Assessment
   - Development of Personality - Concept, Factors effecting development of Personality, Child Rearing Practices, Self-Concept
   - Adjustment, Behavioural problems, Defense Mechanisms, Mental Health
   - Methods and Approaches of Child Development – Introspection, Observation, Interview, Case study, Experimental, Anecdotal Records, Questionnaire, Rating Scales, Cross sectional and Longitudinal
   - Developmental tasks and Hazards

2. UNDERSTANDING LEARNING
   - Concept, Nature of Learning - input - process - outcome
   - Factors of Learning - Personal and Environmental
   - Approaches to Learning and their applicability-Behaviourism (Skinner, Pavlov, Thorndike), Constructivism (Piaget, Vygotsky), Gestalt(Kohler, Koffka) and Observational (Bandura)
   - Dimensions of Learning - Cognitive, Affective and Performance
   - Motivation and Sustenance -its role in learning.
   - Memory & Forgetting
   - Transfer of Learning

3. PEDAGOGICAL CONCERNS
   - Teaching and its relationship with learning and learner
   - Learners in Contexts: Situating learner in the socio-political and cultural context
   - Children from diverse contexts-Children With Special Needs (CWSN), Inclusive Education
   - Understanding of pedagogic methods - Enquiry based learning, Project based learning, Survey, Observation and Activity based learning, Co-operative & Collaborative Learning
   - Individual and Group learning: Issues and concerns with respect to organizing learning in class room like Study habits, Self learning and Learning to learn skills
   - Organizing learning in heterogeneous class room groups - Socio-economic background, Abilities and Interest
   - Paradigms of organizing Learning-Teacher centric, Subject centric and Learner centric
   - Theory of Instruction - Bruner
   - Teaching as Planned activity - Elements of Planning
   - Phases of Teaching - Pre active, Interactive and Post active
   - General and Subject related skills, competencies required in teaching and attributes of good facilitator
   - Learning resources - Self, Home, School, Play, Community, Technology
   - Distinction between Assessment for Learning & Assessment of Learning, School based Assessment, Continuous & Comprehensive Evaluation : Perspective & Practice
II. LANGUAGE - I Marathi (Marks : 30)

(A) Content

I. आकलन (Comprehension):-
   a) अपठित गद्ध
   b) अपठित पद्ध

II. कविपरिचय, लेखक परिचय, करित्रकार, गद्ध, पद्ध विविध प्रक्रिया

III. प्रयोगाचे प्रकार, योग्य क्लेशवर लिहणे, विरामचिन्हे, भाषांतर

IV. वर्णमाला, शब्दांच्या जाती (प्रकार), वचन, काठ, विभक्ती, विराम चिन्ह, संधी, समास, विरुद्धार्थी, समानार्थी, पर्यायबांधी, शब्द, वाक्यप्राचार, म्हणी, अलंकार.

(B) Methodology

I. भाषा – स्वरूप, तैभाषिक सूत्र, उद्धिष्ठे

II. मातृभाषा – (1) उदेश, उद्धिष्ठे, (2) भाषा कौशल्य

III. गद्ध, पद्ध शिक्षणाच्या पद्धती (अध्ययन अध्यापनाच्या पद्धती)

IV. अभ्यासक्रम, वार्षिक नियोजन, घटक नियोजन, पाठ नियोजन

V. शैक्षणिक तंत्रज्ञान

VI. मुल्यांकन
III. LANGUAGE - II (ENGLISH) (Marks: 30)

CONTENT (Marks: 24)


PEDAGOGY (Marks: 06)

1. Aspects of English:- (a) English language - History, nature, importance, principles of English as second language. (b) Problems of teaching / learning English.
2. Objectives of teaching English.
3. Phonetics / Transcription.
4. Development of Language skills:- (a) Listening, Speaking, Reading & Writing (LSRW). (b) Communicative skills - Imparting values through Communication.
5. Approaches, Methods, Techniques of teaching English:- (a) Introduction, definition & types of Approaches, Methods &Techniques of teaching English (b) Remedial teaching.
6. Teaching of structures and vocabulary.
7. Teaching learning materials in English Language Teaching.
8. Lesson Planning.
10. Evaluation in English Language Teaching - CCE

IVa. MATHEMATICS & SCIENCE (Marks: 60)

CONTENT (Marks: 24)

1. Number System - Prime and Composite Numbers, Tests of divisibility, whole numbers, integers, fractions, decimal fractions, L.C.M. and G.C.D. rational numbers and irrational numbers. Properties of numbers, Real numbers; laws of exponents, squares, square roots, cubes, cube roots, finding missing number represented as alphabets in sums involving array of four operations, number patterns, number puzzles, Euclid division lemma, concept of logarithms.
2. Arithmetic - Ratio and proportion, simple interest, compound interest, Time and distance, Discount, tax, time and work, profit and loss
3. Sets - Concept of set, set language, empty set, finite and infinite sets, subset and equality of sets, cardinal number of set, set operations, representation of sets, Venn diagrams and their properties,
4. Algebra -Introduction to Algebra, expressions, exponents and powers, Factorization special products and expansions, linear equations and their graphs, polynomials, Quadratic equations and its applications, concept of progressions, progressions (AP and GP).nth term and sum of the first n terms in AP, nth term of GP
5. Geometry - History of Geometry, Contribution of India in the Development of Geometry, Euclid Geometry, Lines and Angles, Similar Triangles, Pythagoras theorem, congruency of triangles, Properties of Circles, Triangles, Quadrilaterals and polygons, Parts of Circle : Construction of Circle, Triangles and Quadrilaterals, Circles and concurrent lines in triangles, Co-ordinate Geometry, Co-ordinates of a point, plotting of points, representing of linear equations in two variables (of the form ax+by+c=0,) in the Cartesian coordination system). Linear equations with 2 variables, slope of a line, distance between two points in a plane, section formula, Area of a triangle, collinearity of points in a co-ordinate plane, centroid of a triangle, symmetry,
6. **Mensuration** - Perimeter and Area of a Square and Rectangle. Area of Triangle, Circle, Ring and Quadrilaterals. Surface area and volume of Cube, Cuboid, Lateral & total Surface area and volume of a cylinder, cone, sphere and hemisphere, conversion of one solid to another shape, surface area and volume of combination of solids.

7. **Data Handling** - Collection and Classification of Data. Frequency distribution table, Tally marks, Bar graph, Pictograph and Pie diagrams, mean, median and mode for un-grouped and grouped data, cumulative frequency table and ogive curves, concept of probability, simple problems (day to day life situation) on single events, concept of complementary events.

8. **Trigonometry** - Introduction of Trigonometry, Relationship between ratios, values of trigonometric ratios, \( (0^\circ, 30^\circ, 45^\circ, 60^\circ \text{ and } 90^\circ) \) Trigonometric identities, trigonometric ratios of complementary angles, applications of trigonometry, Angle of elevation and depression, simple problems.

**PEDAGOGY (Marks: 06)**

1. Definition and Nature of Mathematics
2. Aims, values, instructional objectives of teaching Mathematics and Academic Standards
3. Methods of Teaching Mathematics
4. Instructional material in Mathematics - TLM in Mathematics
5. Instructional Planning
6. Continuous Comprehensive Evaluation (CCE) – Formative Assessment, Summative Assessment – Processes and procedures
7. Designing, Administration, Analysis of scholastic Achievement Test (SAT)
8. Diagnostic and Remedial Teaching
9. The Mathematics Teacher
10. Resource Utilization
11. Curriculum and Text Book

**IV(a). SCIENCE**

**CONTENT (Marks: 24)**

1. **Natural Resources - Air, Water:** Water pollution, Harnessing of water, States of water, Hardness of water, water pressure
   - Air pollution, Atmospheric Pressure, Air pressure, Archimedes’ principle, Pascal’s law, Bernoulli’s Principle, Hydrometer, Barometer.
   - Laws of floatation, Specific gravity, Surface tension, Fluid Mechanics.
2. **Our Universe:** Solar eclipse – lunar eclipse - Constellation - Zodiac, Space travel; Solar system, Satellites, stars, comets; Earth.
3. **Natural Phenomenon:**
   - **Sound:** Sources of sound, Production and propagation of sound – construction of human ear and its working – Properties of sound – audible range - Sound Pollution, Sound Waves, Kinds of Sound Waves, characteristics of sound waves – reflection of sound – echo – uses of ultrasonic sounds - Musical instruments.
4. **Mechanics - Kinematics, Dynamics:** Concept of motion and rest.
5. **Magnetism and Electricity:***
   - **Magnetism:** Natural Magnets and Artificial Magnets, properties of Magnets, uses magnets – methods of magnetization - Magnetic Induction – magnetic field – Magnetic lines of force.


7. Laws of Chemical Combination and Chemical Calculations: Physical change, chemical change Laws of chemical combination, chemical reactions and calculations. Types of chemical reactions.


10. Metallurgy: Extraction of metals and steps – reactivity of metals and its role in extraction of metals – various methods of extraction of metals.

11. Biology: Its importance in everyday life

12. Living World - Characteristics: Classification of Plants and Animals and their characteristics.

   a) Cell: Concept, Cell theory, differences between Plant cell and Animal cell, Cell divisions, Cell organelles.

   b) Tissues: Animal tissues, plant tissues.


   Economic importance of Plants, Agriculture, Crop diseases & pest control measure.


15. Microbes: Bacteria, Virus, Fungi, Protozoa — useful and harmful microbes, microbial diseases in plants & animals

16. Our Environment: Biotic & Abiotic factors, Natural resources, Biodiversity, different eco systems, air pollution, water pollution, soil pollution, carbon cycle, nitrogen cycle, oxygen cycle.

17. Recent trends in Biology: Hybridization, Genetic engineering, Gene banks, Gene therapy, Tissue culture

PEDAGOGY (Marks: 06)

1. Definition, Nature, Structure and History of Science
2. Aims, Values, Instructional Objectives of teaching Science and Academic Standards in Science
3. Methods of Teaching Science
5. Instructional Planning
6. Science Laboratory
7. Science Teacher - Changing Roles
10. Evaluation - CCE - Formative Assessment, Summative Assessment - Designing and Administration- Analysis of Scholastic Achievement Test (SAT)
IVb. SOCIAL STUDIES (Marks : 60)

CONTENT (Marks 48)

I. DIVERSITY ON THE EARTH

1. Maps - scale - cardinal points - types of maps - evolution of maps - conventional signs - contour lines
2. Globe - oceans and continents - latitudes and longitudes - origin of earth - realms of the earth (lithosphere, atmosphere, hydrosphere, biosphere) - landforms - movements of the earth and its effect - seasons - interior of the earth
4. Elements of climate - types of rainfall.

II. PRODUCTION – EXCHANGE AND LIVELIHOODS


III. POLITICAL SYSTEMS AND GOVERNANCE

1. Tribal Panchayat system - present local body system (Gram Panchayat, Mandal Parishad and Zilla Parishad) & Urban Governments - formation and functions.
3. Regional Kingdoms : Kakatiyas - Vijayanagara Empires - Qutubshahis.
4. Moghals - Asafjahis - British Empire - landlords and tenants under the British and Nizams and Moghals - peasant movement in Hyderabad.
10. Industrialization and social change - Britain, Germany and France - movements of women, workers (Socialism).
11. Colonialism in Latin America, Asia and Africa - impact on India and other regional movements.
14. Post War World and India - UNO - NAM - west Asian conflicts - peace movements and collapse of USSR.
16. The Movement for the formation of Telangana - gentle men's agreement - reasons for Telangana demand - different JACs - TRS - achieving Telangana.
17. Disaster management - types of disasters - drought - accident related - threat of terrorism - human induced disasters
18. Traffic Education - traffic signals - signs - necessary documents

IV. SOCIAL ORGANIZATION AND INEQUITIES
2. Caste discriminations - reformers initiations.
3. Abolition of Zamindari System - Rural poverty at the time of independence - Land ceiling - Bhoolan Movement.

V. RELIGION AND SOCIETY
2. Folk - religion – communal worship of folk deities. The antiquity of folk traditions – inter mixing of village deities and high religious traditions
4. Understanding Secularism.

VI. CULTURE AND COMMUNICATION
1. Indian Heritage and Culture - Historical sites
6. Sports: Nationalism and Commerce
PEDAGOGY (Marks: 12)

1. Social Sciences as an integrating area of study: Context and concerns
   - Distinguishing between Natural and Social Sciences - Social Studies and various Social Sciences - contributions of some eminent Social Scientists

2. Aims and objectives of learning Social Sciences
   - values through Social Sciences - learning objectives and illustrations - learning objectives in constructivist approach - Academic Standards

3. School curriculum and resources in Social Sciences
   - NCF-2005, RTE-2009, SCF-2011 - syllabus - Resources - Dale’s Cone of Experience

4. Teaching – Learning Geography – space, resources and development

5. Teaching – Learning Economics – State, market and development

6. Approaches and strategies for learning Social Sciences
   - collaborative learning approach – 5E learning model – problem solving approach – planning – concept mapping

7. Teaching – Learning History

8. Teaching – Learning of Political Science, Democracy and Development

9. Community Resources and Social Sciences Laboratory

10. Tools and techniques of assessment for learning: Social Sciences
    Evaluation – CCE – assessment framework – assessment learning of students with special needs