

**RMSA- Recruitment to Model Schools**  
**Category of Post: PGT - Zoology**  
**Syllabus**

**Part – I**

**GENERAL KNOWLEDGE AND CURRENT AFFAIRS (Marks: 10)**

**Part – II**

**CHILD DEVELOPMENT AND PEDAGOGY (Marks: 10)**

**1. Development of Child**

Development, Growth & Maturation – Concept & Nature, Principles of development, Factors influencing Development – Biological, Psychological, Sociological, Dimensions of Development and their interrelationships – Physical & Motor, Cognitive, Emotional, Social, Moral, Language relating to Infancy, early Childhood, late Child hood, Adolescence, Understanding Development – Piaget, Kohlberg, Chomsky, Carl Rogers, Individual differences – Intra & Inter Individual differences in the areas of Attitudes, Aptitude, Interest, Habits, Intelligence and their Assessment, Development of Personality – Concept, Factors and Assessment of Personality, Adjustment, Behavioural problems, Pro-social behaviour and Mental Health, Methods and Approaches of Child Development – Observation, Interview, Case study, Experimental, 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, 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, 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, Community, Technology, Class room Management: Role of student, teacher, Leadership style of teacher, Creation of non-threatening learning environment, Managing behaviour problems, Guidance & Counselling, Punishment and its legal implications, Rights of a child, Time Management, Distinction between Assessment for Learning & Assessment of Learning, School based Assessment, Continuous & Comprehensive Evaluation: Perspective & Practice Understanding teaching & learning in the context of NCF, 2005 & Right To Education Act, 2009.

**Part - III**

### **PERSPECTIVES IN EDUCATION (Marks: 10)**

1. History of Education : Pre-Vedic and Post-Vedic period, Medieval Education, Recommendations of various committees during British period with special reference to Woods Despatch (1854), Hunter Commission (1882), Hartog Committee (1929), Sargent Committee (1944), Recommendations of various committees during post independent period with special reference to Mudaliar Commission (1952-53), Kothari Commission(1964-66), Ishwarbhai Patel committee (1977), NPE-1986, POA-1992
2. Teacher Empowerment: Meaning, interventions for empowerment, Professional code of conduct for teachers, Teacher motivation, Professional development of Teachers and Teacher organizations, National / State Level Organizations for Teacher Education, Maintenance of Records and Registers in Schools.
3. Educational Concerns in Contemporary India: Environmental Education, Meaning and scope of Environmental Education, Concept of sustainable development, Role of Teacher, School and NGOs in development and protection of environment, Democracy and Education, Equality, Equity, Quality in Education, Equality of Educational opportunities, Economics of Education, Meaning and scope, Education as Human Capital, Education and Human Resource Development, Literacy – Saakshar Bharat Mission, Population Education, Significance of Population Education, Population situation, policies and programmes in India, Approaches to Population Education and role of school and teacher, Themes of population Education, Family life Education, Sustainable development, Adolescence Education, Health Education, Gender – Equality, Equity and Empowerment of Women, Urbanization and migration, Life skills, Inclusive Education, Conceptual Clarification and Definition, Prevalence, Myths & Facts, Characteristics, Classification & Types, Importance of Early Identification and assessment, Planning Inclusive Education, Classroom Management in Inclusive Education, Evaluation, Documentation and Record Maintenance, Psycho-Social management, Awareness & Sensitization Strategies, Liberalization, Privatization and Globalization, Value Education, Sarva Siksha Abhiyan, National Programme for Education of Girls at Elementary Level (NPEGEL), Mid-day-meals, Rashtriya Madhyamika Siksha Abhiyan(RMSA), KGBVs and SUCCESS Schools.
4. Acts / Rights: Right of Children to Free and Compulsory Education Act, 2009 and Child Rights.
5. National Curriculum Framework, 2005: Perspective, Learning and Knowledge, Curricular Areas, School Stages and Assessment, School and Classroom Environment and Systemic Reforms.

### **Part - IV**

#### **LANGUAGE: ENGLISH (Marks: 10)**

1. Poets, Essayists, Novelists, Dramatists and their works.
2. Forms of Language – Story, Essay, Letter writing, Editorial, Précis writing, note- making, autobiography and biography.
3. Pronunciation – Sounds – Use of dictionary
4. Parts of Speech
5. Tenses
6. Types of Sentences
7. Articles and Prepositions
8. Degrees of Comparison
9. Direct and Indirect – Speech
10. Clauses
11. Active and Passive Voice
12. Use of Phrases

13. Comprehension of a Prose passage / Poems
14. Vocabulary

## Part - V

### CONTENT (Marks: 48)

#### 1. Classification of Animal Kingdom

#### 2. Non Chordata

Classification of Non Chordata

General characteristics and features of

Protozoa	: Polystomella, Trypanozoma type study.
Porifera	: Canal system, histology & Spicules.
Cnideria	: Obelia type study,
Platihelmenthes	: Fasciola type study,
Nematodes	: Ascaris
Annelida	: Earth worm, Leech type study
Arthropoda	: Palaemon type study
Mollusca	: Snail type study
Echinodermata	: Star fish type study

#### 3. Chordata

Classification of Chordata

General characteristics and type study of the following with reference to skeletal system, respiratory system, circulatory system and nervous system.

Pisces	: Scoliodon
Amphibia	: Frog
Reptilia	: Calotes
Aves	: Pigeon
Mammalia	: Rabbit

4. **Cell Biology:** Ultra structure of the cell: Plasma membrane, mitochondria, Golgi bodies, Nucleus, Endoplasmic Reticulum, Ribosomes, Chromosomes and their fine structure, Mitosis and Meiosis, DNA & RNA and Genetic Code, Protein Synthesis, tissues.
5. **Genetics:** Mendel's Law of inheritance – critical view, Linkage, crossing-over, sex-linked inheritance, mutations, inborn errors of Metabolism, human Genetics and genetic engineering.
6. **Physiology:** Vitamins, Enzymes, Carbohydrates, Proteins and Lipids metabolism, Osmoregulation, Thermo-regulation, Excretion in vertebrates, muscle contraction, Nerve Impulse, vertebrate hormones and Mammalian reproduction.
7. **Animal Behaviour:** Taxis, reflexes, instinctive behaviour, motivated behaviour, learning imprinting, habituation, classical conditioning, instrumental conditioning, trial and error learning, physiology and phylogeny of learning, biological rhythms – circadian, lunar and circannual rhythms.
8. **Developmental Biology:** Gastrulation in Frog and Chick, Development of Chick upto 24 hrs, Foetal membranes of chick, Placenta in Mammals (Formation and types)
9. **Evolution:** Origin of Life – Modern concepts, theories of Evolution, Isolation, Speciation, Natural Selection, Hardy Weinberg's Law, population genetics and evolution, adaptations, evolution of Man. Zoogeographical realms of the world.
10. **Ecology:** Concept of Ecosystem, Biogeochemical cycles, influence of environmental factors on animals, energy flow in Ecosystem, food chains & trophic levels, community ecology. Ecological Succession, Environmental Pollution – Air, water, land, noise, radio active, thermal and visual; Effects of pollution on ecosystem, prevention of pollution.
11. **Wild Life in India and Conservation of Wild Life.**

## **Part - VI**

### **TEACHING METHODOLOGY (Marks: 12)**

1. The Nature & Scope of Science: A brief introduction of Oriental and Western Science, Nature of Science, Scope of Science, Substantive and Syntactic Structure of Science.
2. Aims and Values of Teaching Biological Sciences: Aims of teaching Biological Sciences, Values of teaching Biological Sciences.
3. Objectives of Teaching Biological Sciences: Importance of Objectives of Teaching Biological Sciences, Bloom's Taxonomy of Educational Objectives and limitations, Writing Instructional Objectives and Specifications.
4. Approaches and Methods of Teaching Biological Sciences: Inductive Approach and Deductive Approach, Methods of Teaching 1. Lecture Method, 2. Lecture cum Demonstration Method, 3. Heuristic Method, 4. Project Method, 5. Experimental Method, 6. Laboratory Method.
5. Planning for effective Instruction: Year Plan, Unit Plan, Lesson Plan – Herbartian and Bloom's Approach, Criteria for Evaluation of Lesson Plan. Self Evaluation and Peer Evaluation, Learning experiences – Characteristics, Classification, Sources and Relevance, Teaching – Learning Material and Resources in Biological Sciences.
6. Science Laboratories: Importance of Practical work in Biological Sciences, Planning Science Laboratory, Procurement, Care and Maintenance of Laboratory Equipment, Maintenance of different Registers, Safety and First aid, Development of Improvised Apparatus.
7. Science Curriculum: Principles of Curriculum Construction, Defects in the existing School Science Curriculum, Correlation of Biological Sciences with other School Subjects, Qualities of a good Biological Science Text-book.
8. Biological Science Teacher: Qualities of a good Biological Sciences Teacher, Roles and Responsibilities.
9. Non-formal Science Education: Science club, Eco-club, Blue-club, Red ribbon club, Science fairs – Objectives, levels of organizations, importance, Science Laboratories, Role of NGO'S and State in popularizing science.
10. Evaluation: Concept and process of Measurement and Evaluation, Continuous Comprehensive Evaluation, Tools of Evaluation, Preparation of Scholastic Achievement Test(SAT), Analysis and interpretation of scores.