

**SYLLABUS FOR COMPUTER BASED RECRUITMENT TEST (CBRT)**  
**FOR THE POST OF ASSISTANT DISTRICT EDUCATIONAL INSPECTORS/**  
**TEACHER GRADE –I (BIOLOGY)**  
**UNDER**  
**DIRECTORATE OF EDUCATION**  
**(Advt No. 04 Year 2023)**

- I. General English including Grammar - 05 marks
- II. General Knowledge, Current Affairs and Events of National and International Importance - 10 marks
- III. Logical Reasoning and Analytical Ability - 10 marks
- IV. Core: - 50 marks

**PART-I(30 Marks)**

- 1) **Taxonomy** : Definition of life, Biodiversity, Concept of species and taxonomical hierarchy, Binominal nomenclature, Tools for study of taxonomy – Museums, Zoos, Herbaria, Botanical gardens.
- 2) **Structural organization in Animals and Plants** : Animal Tissue : Types, Origin, Location, Structure and functions.
- 3) **Plant tissue** : Anatomy of root, stem, and leaves of monocots and dicots Morphology, anatomy and functions of Morphological types Inflorescence, flower and fruits.
3. **Cell Structure and Functions** : Concept of Cell Theory; Structure of Prokaryotic and Eukaryotic cell; Plant and Animal cell; Structure, properties and functions of cell surface - cell process, cell organelles-structure and function; Chromosomes – Structure, types, aberrations.
- 4) **Chemical constituents of living cells** : Biomolecules - Structure and functions of proteins, carbohydrates, lipids, nucleic acids; Enzymes – Types, properties and enzyme action. Cell cycle; cell division - mitosis, meiosis and their significance.
5. **Animal Physiology** : Digestion and absorption, Breathing and Respiration, Body fluids and circulation, Excretory product and their elimination, Locomotion and movement, Neural control and coordination, Chemical coordination and regulation, 2 Reproduction.
- 6) **Embryology** : Gametogenesis, Spermatogenesis and Oogenesis, Fertilization, Cleavage, Blastula, Gastrula-Morphogenetic movement, Fate maps, embryonic induction, Metamorphosis of frog.
7. **Reproduction in Plants** : Vegetative, Asexual and Sexual Reproduction. Structure of flower, Pollination, Fertilization, Development of embryo.
8. **Plant physiology** :- Water relations, Transpiration, Photosynthesis, Respiration, Growth, Mineral Nutrition, Plant movements, Nitrogen and Lipid Metabolism.
9. **Biology and Human Welfare** : Basic concepts of immunology, vaccines, Pathogens, Parasites, Cancer, AIDS
10. **Ecology and Environment**: Organism and its environment. Population and ecological adaptations Environmental factors (climatic, edaphic and biotic )
- 11) **Ecosystems**- components, types, energy flow; Food chain, food web
- 12) Biostatistics : Mean, Mode, Median, Standard deviation, Tabular and graphical representation of data-table.

**PART-I (20 Marks)**

**I: The Teacher In The Emerging Indian Society**

- Relationship between Philosophy and Education
- Educational Provisions in the Constitution of India
- Naturalism, Pragmatism, Humanism
- Socialization and Education - The role of family, peer group, school and the media of communication
- Education and Social Stratification
  - Inequalities of educational opportunity: religion, caste, class and gender
  - Social determinants of educability
  - The role of education in mobility

- Education and Social Change

## **II: Psychology of the Learner and Learning**

- The role of heredity and environment in development.
- Cognitive Development (Piaget)
- Characteristics of Adolescence (physical, mental/cognitive, emotional, social).
- Gardner's theory of multiple intelligences,
- Dealing with Individual Differences
  - Children with learning disabilities
  - Emotionally disturbed children
  - Gifted students
  - Fostering creativity in students

### Information Processing (Sensory register, STM and LTM)

- Classroom implications of the Information Processing Theory
- Forgetting and causes of forgetting
- Constructivist view of learning
- Critical thinking
- Transfer of learning
- Classroom implications of the Cognitive Learning Theory
- Intrinsic and Extrinsic Motivation
- Classroom climate and group dynamics

## **III: Evaluation and Assessment**

- Concept and Function of Educational Evaluation
  - Basic types of Evaluation
  - Placement, Formative Diagnostic, Summative Evaluation
- Phases of Evaluation
  - Collecting evidence...- Forming judgements - Taking decisions
- Taxonomy of Educational Objectives
  - Various steps of setting a question paper: Blue print, preparation of test items, review of test items, scoring key
- Need for grading
  - Direct grading versus indirect grading
  - Absolute grading versus relative grading
- Continuous Internal Assessment - Need, Areas, Advantages
- Portfolio Assessment

## **IV: Educational Technology**

- Components of an Instructional System
- Application of Systems Approach to planning lessons and instructional Material.
  - Communication – meaning, modes and functions
  - Communication Process (Communication cycle)
- Barriers to communication and overcoming these barriers
- Kinds of Communication
  - Verbal communication - improving listening and speaking skills
  - Non verbal Communication - Art, Forms, Symbols, Appearances and Body language (Touch, Facial expression, Eye contact).
  - Improving non-verbal communication

Dale's cone of experiences

Computer assisted learning

-Subject specific software and its uses

-General educational software e.g. encyclopaedia

- Computers for simulation, drill/practice, educational games and tutorials

- Computer aided evaluation

- Advantages and Limitations in the use of computers

**Note:**

**Duration for C.B.R.T : 90 Minutes**

**Maximum Marks for C.B.R.T : 75 Marks**