

TGT Science: (CBZ)

(This section shall carry equal marks from Chemistry Botany and Zoology subjects with equal proportion of marks)

Section I

Chemistry

[20 questions are to be asked. Each question carries 01 mark]

(Same as in TGT PCM Syllabus)

Section II

BOTANY

[20 questions are to be asked. Each question carries 01 mark]

1. Plant Diversity and Conservation

- Nomenclature and classification of plant kingdom, plant divisions- Thallophyta, Bryophyte, Pteridophyta, Gymnosperms and Angiosperms, their habitat and complexity in their structural organization. Endangered plant species and their conservation measure.

2. Tissue System

- Meristematic and permanent tissues: their types, organization and functions.
- Tissue System: Epidermal, ground and vascular tissue system, internal structure of dicot and monocot stems and roots secondary growth in plants.

3. Photosynthesis

- Structure and photosynthetic pigments, Light reaction: light absorption, electron transport and photophosphorylation, Dark reaction- CO₂ fixation by C₃, C₄ and CAM plants, photorespiration.

4. Growth Regulators in Plants

- Auxins, Gibberellins, Cytokinins, Ethylene and Abscissic acid, their role in plant growth regulation.

5. Reproduction in plants

- Vegetative reproduction: Fission, budding and cutting (grafting) and propagation in angiosperms.
- Asexual Reproduction: Sporulation, Conidia formation and other special structure formation.
- Sexual Reproduction: Isogamy, Anisogamy and Oogamy, double fertilization and triple fusion in angiosperms.
- Parthenogenesis: Tissue culture and micro propagation

6. Mendelism

- Mendelian factors, Monohybrid cross and principles of dominance and segregation.
- Di hybrid cross: Laws of independent assortment.
- Deviations from Mendelian principles

7. Plant Diseases and Control Measures

- Causal Organisms, symptoms, life cycle and control measures of following diseases: Late blight of potato, powdery mildew, Rust and Smut of Wheat, Leaf Sport and blast disease of rice.

Section III
ZOOLOGY

[20 questions are to be asked. Each question carries 01 mark]

1. Taxonomy

- Five kingdom classification, Characteristics and Examples of each animal phylum (in case of phylum Chordate up to Classes)

2. Cytology

- Cell structure and cell division (mitosis and meiosis), DNA and RNA

3. Genetics

- Linkage, Crossing over, Mutation, Chromosomal aberration and chromosomal mechanism of sex determination

4. Evolution

- Darwinism, Modern Synthetic theory of evolution (variation, selection and isolation)

5. Ecology

- Eco-system, Food Chain and Food Web, Energy Flow, Ecological Pyramids, Renewable and Non-renewable energy resources, Biodiversity (meaning and conservation), Causes, Effects and Control of Air pollution.

6. Nutrition

- Types of food and types of nutrition,

7. Respiration

- Types of respiration (aerobic and anaerobic) Glycolysis and Krebs Cycle

8. Circulation

- Blood (Composition and function) in man, structure and working of human heart

9. Excretion

- Human Kidney (structural details), mechanism of urine formation

10. Control and Coordination

- Structure of neuron, synaptic transmission, structure of human brain and function of its different parts, names of endocrine glands and secreted hormones with their specific functions

11. Reproduction and Development

- Structure of Gonads (ovary and testes) and Gametes in man, Fertilization. Types of cleavage.