

**CBZ :** This section shall carry the questions from Chemistry, Botany and Zoology subjects with equal proportion of marks:

## **CHEMISTRY**

As indicated in the PCM Syllabus

## **BOTANY**

### **1. Plant Diversity and Conservation**

**04 Marks**

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

### **2. Tissue System**

**03 Marks**

- 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**

**03 Marks**

- Structure and Photosynthetic pitments, Light reaction : light absorption, electron transport and photophosphorylation, Dark

reaction - CO<sub>2</sub> fixation by C<sub>3</sub>, C<sub>4</sub> and CAM plants, photorespiration.

**4. Growth Regulators in Plants**

**02 Marks**

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

**5. Reproduction in Plants**

**04 Marks**

- Vegetative Reproduction : Fission, budding and cutting (grafting) and propagation in angiosperms.
- A Sexual Reproduction : Sporulation, Comidia formation and other special structure formation.
- Sexual Reproduction : Isogamy, anisogamy and oogamy, double fertilization and triple fusion in angiosperms.
- Parthenogenesis : Tissue culture and micropropagation

**6. Mendelism**

**02 Marks**

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

**7. Plant Diseases and Control Measures**

**02 Marks**

- 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.

## **ZOOLOGY**

**Full Marks : 20**

**1. Taxonomy**

**01 Mark**

- Five kingdom classification, Characteristics and Examples of each animal phylum (in case of phylum chordata up to classes) (01 question)

**2. Cytology**

**02 Marks**

- Cell structure and cell division (mitosis and meiosis), DNA and RNA (02 questions)

**3. Genetics** **02 Marks**

- Linkage, Crossing over, Mutation, Chromosomal aberration and chromosomal mechanism of sex determination (02 questions)

**4. Evolution** **02 Marks**

- Darwinism, Modern Synthetic theory of evolution (variation, selection and isolation) (02 questions)

**5. Ecology** **02 Marks**

- Eco-system, Food Chain and Food web, Energy Flow, Ecological Pyramids, Renewable and Non-renewable energy resources, Bio-diversity (meaning and conservation), Causes, Effects and Control of Air Pollution (02 marks)

**Life Processes:**

**6. Nutrition** **01 Mark**

- Types of food and types of nutrition, names and functions of digestive enzymes (01 question)

**7. Respiration** **02 Marks**

- Types of respiration (aerobic and anaerobic) Glycolysis and Krebs cycle (02 questions)

**8. Circulation** **02 Marks**

- Blood (composition and function) in man, structure and working of human heart (02 questions)

**9. Excretion** **02 Marks**

- Human kidney (structural details), mechanism of urine formation (02 questions)

**10. Control and Coordination** **02 Marks**

- Structure of neuron, synaptic transmission, structure of human brain and function of its different parts, names of endocrine