

Note: Section-I is compulsory. Attempt any three (3) questions from Section-II.

### SECTION - I

#### 2. Write short answers to any EIGHT questions.

(2 x 8 = 16)

- Write down the comparison between saturated and unsaturated fatty acids with example.
- What is effect of enzyme concentration on the rate of reaction?
- Why some enzymes are produced in inactive form? Give one example.
- Define Induce Fit Model of enzyme and who proposed it?
- Compare obligate parasite with facultative parasite with example.
- What are Mycorrhizae? Give their importance.
- Give two comparisons of protostomia and deuterostomia with example.
- Define Placenta, give its function.
- How are Echinoderms related to chordates?
- What are prototherian mammals? Give an example.
- Differentiate absorption and action spectrum.
- Define Calvin Cycle. Where does it occur?

#### 3. Write short answers to any EIGHT questions.

(2 x 8 = 16)

- Define biological method. What is biological problem?
- How would you distinguish between biological control and bioremediation?
- Who stated "Omnis cellula e cellula"? What does it mean?
- Define congenital diseases? Give examples and their causes.
- Write down name of a parasitic amoeba. What disease does it cause?
- What are red tides?
- Why slime moulds are included in Kingdom protocista?
- How Phytophthora infestans caused Irish potato famine?
- What is the role of mitochondria in photorespiration?
- How scuba diver breaths pressurized air?
- What is the difference between pulmonary and systemic circulation?
- How blood helps in maintaining internal environment of body?

#### 4. Write short answers to any SIX questions.

(2 x 6 = 12)

- Give any four symptoms of hepatitis.
- Write down four postulates of "Germ Theory of Disease".
- How does peristalsis differ from antiperistalsis?
- Clarify the terms villi and microvilli.
- What are the symptoms of Nitrogen deficiency in plants?
- Define double fertilization. Give its importance.
- What are fronds? In which class of tracheophyte fronds are present?
- Why Bambusa is economically important?
- How are Bryophytes considered as amphibians of the plants?

### SECTION - II

- What is Biological organization? Discuss population and community level organization. (4)
  - Describe mechanism of breathing in Man. (4)
- Describe the acylglycerols in detail. (4)
  - Draw a labelled graphic representation of life cycle of rhizopus (no description is needed). (4)
- List organelles which are single membrane bound, double membrane bound and lacking any membrane? Draw a labelled diagram of a section through Mitochondria. (4)
  - Discuss following disorders: (4)
    - Food poisoning
    - Piles
- Define species. Discuss binomial nomenclature with biological classification of corn. (4)
  - Define blood. How red blood cells and white blood cells are developed from stem cells in bone marrow? (4)
- Discuss habitat, occurrence, structure and reproduction of Nostoc. (4)
  - Explain respiratory electron transport chain. (4)