

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)**

- What are the causes of renal failure?
- Differentiate between endotherm and ectotherm.
- What is feedback mechanism?
- What is hydrostatic skeleton? Give one example.
- Compare osteomalacia and osteoporosis.
- What are the causes of muscle fatigue?
- What is the role of phytochromes in plants?
- How diploid parthenogenesis takes place in aphids?
- Which kind of life is present in profundal zone of lake ecosystem?
- What is the impact of humans on temperate deciduous forests?
- What are the causes and effects of greenhouse effects?
- What are the consequences of population increase?

3. Write short answers to any EIGHT questions.**(2 x 8 = 16)**

- What is parasympathetic nerve system?
- How is parkinson's disease caused?
- What is latent learning?
- Differentiate autosomes and sex chromosomes.
- What do you mean by multifactorial trait?
- What are the causes of type-I diabetes?
- What is a probe?
- Give an application of transgenic plants?
- What are the goals of human genome project?
- Define synecology.
- How do fungi give and take benefits in mycorrhizal association?
- Differentiate gross primary production and net primary production.

4. Write short answers to any SIX questions.**(2 x 6 = 12)**

- Differentiate primary growth from secondary growth in plants.
- Flatworms develop lost body parts. Discuss it.
- One gene – one enzyme hypothesis has been changed to one gene – one polypeptide hypothesis. Comment on it.
- How all organisms use same basic mechanism of reading and expressing the genes?
- A point mutation causes the production of a defective enzyme. Comment on it by referring phenylketonuria.
- Give at least two differences of mitosis and meiosis.
- Just give names of substages of prophase – I of meiosis.
- Differentiate Theory of Special Creation from Theory of Natural Selection.
- Distinguish homologous organs from analogous organs by giving examples.

SECTION - II

- Draw and explain urinary system of man. (4)
 - Discuss meiotic error (non-disjunction) with two syndromes. (4)
- Illustrate the ultrastructure of myofilaments of human skeletal muscle fiber. (4)
 - Describe the flow of energy in the food chain of an ecosystem. (4)
- How is nervous system of Planaria better developed than that of Hydra? Discuss. (4)
 - How does comparative anatomy support evolution? (4)
- What is epistasis? Explain with reference to Bombay phenotype. (4)
 - Describe vernalization. Give its importance. (4)
- Why did Spemann designated the dorsal lip area as primary organizer? Explain with his experiment. (4)
 - What is genomic library? How would you locate a gene of interest in the library? (4)