Time: 2:40 Hours **SUBJECTIVE** **Marks: 68**

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)**

i. Differentiate between hypotonic and hypertonic environments.
ii. Which nitrogenous wastes are produced by the metabolism of purine and pyrimidine?
iii. Differentiate between ureter and urethra.
iv. What are collenchyma cells?
v. Write down any two major functions of the skeletal system.
vi. Write down a note on hematoma formation.
vii. Differentiate between oviparous and viviparous.
viii. Define gonorrhoa in detail.
ix. How temperate deciduous forests were affected by human impact?
x. Write down a note on productivity.
xi. How forests play their role on climate?
xii. What are two main sources of water pollution?

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

i. Give the commercial applications of gibberellins.
ii. What are effectors? Give their types.
iii. What is Parkinson's disease?
iv. Compare Allele with multiple alleles.
v. What is product rule?
vi. Differentiate between sex chromosomes and autosomes.
vii. What are transgenic plants?
viii. What is cystic fibrosis?
ix. What is gene sequencing?
x. Differentiate between Biomes and Biosphere.
xi. What are producers and consumers?
xii. What is commensalism?

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

i. Differentiate between maturation and differentiation.
ii. Define growth correlations.
iii. Differentiate between heterochromatin and euchromatin.
iv. What are okazaki fragments?
v. Differentiate between nucleotides and nucleosides.
vi. Explain briefly prophase in mitosis.
vii. How malignant tumor or cancer is caused?
viii. Differentiate between homologous organs and analogous organs.
ix. What is theory of special creation?

(SECTION - II)

5. (a) Describe osmoregulation in the animals of marine environment. 4
   (b) Describe the biotic components of an ecosystem. 4
6. (a) Describe major functions of human skeletal system. 4
   (b) Explain Meselson – Stahl experiment for DNA replication. 4
7. (a) Describe the functions of abscisic acid as growth hormone in plants. 4
   (b) Write down a note on ozone layer and ozone layer depletion. 4
8. (a) Write down a note on identical twins and fraternal twins. 4
   (b) Discuss diabetes mellitus and its genetic basis. 4
9. (a) What are growth correlations? 4
   (b) Write down the contributions of Darwin in evolution. 4