

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)

- What is lithotripsy?
- Define panting with one example.
- Define dialysis. Give its types.
- Distinguish between origin and insertion of muscles.
- What is hematoma formation?
- What are floating ribs?
- What is follicle atresia?
- Define parthenocarpy with examples.
- Give the name of some major ecosystems in Pakistan.
- Compare littoral zone with limnetic zone.
- What is acid rain?
- What are two main sources of water pollution?

3. Write short answers to any EIGHT questions.

(2 x 8 = 16)

- What are diurnal rhythms and circannual rhythms?
- Write down any two functions of ethene.
- What are neurotransmitters? Give one example.
- Differentiate between genotype and phenotype.
- What is over dominance?
- What are secretors?
- Write down a note on restriction endonuclease and give its one function.
- What is probe? Write down its role.
- Write down a note on Taq Polymerase.
- What is niche?
- Write down biotic components.
- Write down a note on root nodules.

4. Write short answers to any SIX questions.

(2 x 6 = 12)

- Write down the role of auxins and cytokinins in apical dominance.
- How development is affected by ionizing radiations and nutritional deficiency?
- Define promoter region. Which binding sites are present in this region?
- Which is true DNA replicating enzyme in E.Coli? Also write its structural features.
- How eukaryotic m RNA is modified? What is the significance of this modification?
- What is the cause of Klinefelter's syndrome? Write down the symptoms of this disease.
- Differentiate between G₀ and G₁ phases of cell cycle.
- Define population and population's gene pool.
- What is endosymbiont hypothesis? Who proposed this hypothesis?

(SECTION - II)**5. (a) Give a detailed account of nitrogen cycle.**

(b) Define nephron. Discuss its structure and function in detail.

6. (a) Write down a note on sclerenchyma cells and collenchyma cells.

(b) Explain Watson and Crick's model of DNA.

7. (a) Describe in detail the role of adrenal glands.

(b) Describe the causes and effects of acid rain.

8. (a) Discuss the process of birth in human female.

(b) Explain codominance with the help of MN blood group system in man.

9. (a) Define regeneration. Describe the mechanism of regeneration in planaria and salamander.

(b) Explain the evolution of eukaryotes by endosymbiotic hypothesis and membrane invagination hypothesis.