

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)

- Account one each main adaptation in plants to high and low temperatures.
- Why does filtration takes place only at glomeruli part of Nephron and nowhere else?
- Mention two metabolic altered states that generally (70%) cause kidney stone formation.
- What are unguligrades? Give example.
- Name the unpaired bones of Cranium.
- What is pulvinus? Write down its role in turgor movements.
- Define Haploid parthenogenesis. Give example.
- Name disease caused by Treponema pallidum. Also write down its two symptoms.
- Define soil. Mention its one role and one problem.
- What are Plankton? Give their two types.
- What is Limnetic zone? Mention its life.
- What is meant by Hydroelectric power? Write down its advantages.

3. Write short answers to any EIGHT questions.

(2 x 8 = 16)

- Is it possible to eliminate biorhythms in an organism?
- Describe exocrine and endocrine functions of pancreas.
- What happens when dopamine production is stopped in brain?
- Why AB blood group is universal recipient?
- What is pleiotropy? Give one example.
- What is vortex mixing technique?
- What is testicular feminization syndrome?
- How familial hypercholesterolemia is treated using gene therapy?
- Why plasmids are naturally present in bacteria?
- Compare ecology with autecology.
- What is the role of bacteria in leguminous plants?
- Describe the importance of food chain in an ecosystem.

4. Write short answers to any SIX questions.

(2 x 6 = 12)

- How is primitive streak formed?
- What do you know about intercalary meristem?
- Name and draw the (P-O-C) bond responsible for the stability of Nucleic Acid molecule.
- What was the effect of x-rays on Neurospora spores in Beadle and Tatum experiment?
- What changes occur in a cell during apoptosis?
- Why does DNA thread coils every 200 nucleotides around histone protein molecules?
- What are functions of mitotic apparatus?
- State theory of special creation.
- What do you know about fixed alleles?

SECTION – II

- Explain through a diagram the thermostat function of hypothalamus and feedback mechanism in human thermoregulation. (4)
 - Explain the Necrosis and Apoptosis in development and growth. (4)
- Describe sliding filament model. What does it explain? (4)
 - What do you know about grazing? (4)
- Describe nervous disorders. (4)
 - What ideas support the inheritance of acquired characters? (4)
- Write a note on reproduction system of human female. (4)
 - Define and explain law of independent assortment. (4)
- What does embryonic induction mean? Write down the experiments of Spemann and Mangold to demonstrate the phenomenon. (4)
 - What are restrictions endonucleases? Elaborate their importance for bacteria and Recombinant DNA technology? (4)