

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)

- Write down different methods to remove kidney stones.
- What is blubber? In which type of animals, it is found?
- Why some fishes retain trimethylamine oxide in their bodies?
- Describe various types of sclerenchyma cells.
- What is the main disadvantage of exoskeleton? How insects deal with this problem?
- Write down characteristics of cardiac muscles.
- What are day neutral plants? Give two examples.
- What is follicle? How it is related to FSH?
- Describe some characteristics of profundal zone.
- Elaborate the layering characteristic of grassland ecosystem.
- How the use of hydroelectric power is better than use of fossil fuels?
- What do you mean by the term afforestation?

3. Write short answers to any EIGHT questions.

(2 x 8 = 16)

- How can you differentiate between reflex action and reflex arc?
- What are Pacinian Corpuscles?
- Draw and label sensory neuron.
- Why did Mendel devise a Test Cross?
- Workout all possible types of gametes from the individual having genotype "AaBbCc".
- Why blood group "O" is called as universal donor?
- How can you get a gene of interest?
- What is probe? Give its use.
- Which technique is used to produce a haploid plant in tissue culture?
- How nitrification differs from denitrification?
- What are Abiotic Components of an ecosystem?
- Differentiate between Autecology and Synecology.

4. Write short answers to any SIX questions.

(2 x 6 = 12)

- What are intercalary meristems? Give their role.
- How CO<sub>2</sub> affects the growth rate in plants?
- Name the three non-sense codons.
- Give four differences between DNA and RNA.
- What are point mutations?
- What is metastasis?
- Define crossing over. Give its importance.
- What are vestigial organs? Give two examples.
- Name any four species, declared extinct in Pakistan.

**SECTION – II**

- Write down a comprehensive note on excretion in plants. (4)
  - Define cell cycle. Discuss interphase in detail. (4)
- What are autonomic movements? Discuss their types. (4)
  - Explain predation and parasitism in detail. (4)
- In what way the feedback mechanism takes place to regulate the Hormonal Production? (4)
  - Describe the phenomena of Green House Effect, its causes and impacts. (4)
- Describe Asexual reproduction in animals. (4)
  - Define diabetes Mellitus? Explain its types. (4)
- How embryonic induction was proved by Hans Spemann and Hilde Mangold? (4)
  - Write down a note on gene sequencing. (4)