

Time: 20 Minutes

OBJECTIVE **Code: 8468** *GVJ-2-24* **Marks: 17**

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

1. The methyl containing nitrogenous base is
 (A) uracil (B) cytosine (C) thymine (D) adenine
2. Fresh water ecosystem covers less than
 (A) 2% (B) 3% (C) 1% (D) 97%
3. Tapeworm is primary parasite of
 (A) octopus (B) pig (C) cattle (D) man
4. Rickets is caused by the deficiency of
 (A) vitamin D (B) vitamin C (C) vitamin A (D) vitamin B
5. The negative physiological changes in our body are called
 (A) regeneration (B) abnormalities (C) degeneration (D) aging
6. The inexhaustable resource of energy on earth is
 (A) coal energy (B) solar energy (C) fossil fuel (D) natural gas energy
7. Archeobacteria tolerate temperature about
 (A) 100 °C (B) 120 °C (C) 80 °C (D) 40 °C
8. The homologous chromosomes get separated during
 (A) Prophase – I (B) Anaphase – I (C) Telophase – I (D) Metaphase – I
9. MODY starts before
 (A) 50 years (B) 30 years (C) 40 years (D) 25 years
10. Sarcoplasmic Reticulum are devoid of
 (A) Lysosomes (B) chloroplast (C) peroxisomes (D) Ribosomes
11. The effective drug for Parkinson's disease is
 (A) Nicotine (B) AZT (C) L.dopa (D) GDNF
12. Apical dominance is caused by
 (A) Auxins (B) gibberellins (C) ethene (D) cytokinins
13. Which one of the given is non-sense codon?
 (A) UAA (B) UCC (C) UCG (D) UCU
14. The commonly used restriction enzyme is
 (A) EcoR1 (B) Bam H1 (C) pBR 322 (D) pSC 10
15. Excretory structures present in cockroach is
 (A) Nephridia (B) Malpighian Tubules (C) Contractile Vacuole (D) Flame Cells
16. Cystic Fibrosis patients lack gene that code for transmembrane carrier of
 (A) Chloride Ions (B) Carbonate Ions (C) Bromide Ions (D) Sulphate Ions
17. Which one is Parthenogenic fruit?
 (A) Mango (B) Pineapple (C) Peach (D) Apple

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 unguigrades? 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)