BABT32 — PRINCIPLES OF GENETICS

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define genetics.

2. What is Punnet square?

3. What is allelic variation?

4. Define complete dominance with an example.

5. Define Transformation.

6. Give two examples of genetic disorder.

7. Define a mutagen with two examples.

8. How does Thymine dimer occur?

9. What is pedigree analysis?

10. Give an example of Mitochondrial inheritance.

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SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Write in detail about principles of dominance and segregation.

Or

(b) Write about the characteristic features of Mendelian Plant.

12. (a) What is pseudo allelism? Explain with examples.

Or

(b) Write briefly about penetrance and expressivity.

13. (a) Explain the process of conjugation in bacteria.

Or

(b) What is gene mapping? What is its application?

14. (a) Write briefly about molecular basis of mutation.

Or

(b) What are the harmful effects of radioactive mutation?

15. (a) Write in detail about cytoplasmic male sterility in plants.

Or

(b) Explain about extra chromosomal inheritance.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the principles of genetics with a dihybrid cross.

17. What are multiple alleles? Explain ABO blood classification and rhesus allele.

18. Discuss the Tetra analysis haploid mapping.

19. Write in detail about classification of mutation.

20. How is prenatal and post natal screening done for genetic analysis?

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