

NOVEMBER/DECEMBER 2019

BABT32 — PRINCIPLES OF GENETICS

Time : Three hours.

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Why was *Pisum sativum* chosen by Mendel?
2. Define alleles.
3. Define pleiotropy.
4. How does a Rhesus allele express in human phenotype?
5. Differentiate between haploid and diploid cell.
6. Define penetrance.
7. How does Point mutation occur?
8. What are Intercalating agents?
9. What is Amniocentesis?
10. How does Plastid inheritance occur?



SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) What were the characteristics chosen by Mendel in *Pisum sativum*?

Or

- (b) Write the principles of dominance and segregation.

12. (a) Explain linkage with a neat diagram.

Or

- (b) Explain briefly about complete and incomplete dominance.

13. (a) Write briefly about gene transfer by transduction.

Or

- (b) What is karyotyping? Write its role in genetic analysis.

14. (a) How is thymine dimer formed? Explain with neat illustration.

Or

- (b) What is the pleiotropic effect of gene expression?

15. (a) Write a short note on mitochondrial inheritance.

Or

- (b) Write briefly about pedigree analysis.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. With a neat illustration explain Mendel's dihybrid cross.

17. What are the characteristics of ABO blood group and rhesus allele?

18. Explain the gene transfer mechanism of conjugation with neat illustration.

19. Explain point mutation. Differentiate between transition and transversion mutation.

20. Discuss about extra chromosomal inheritance with an example.

