OCTOBER 2011 **P/ID 40228/PBTH**

Time : Three hours Maximum : 100 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

All questions carry equal marks.

Each answer should not exceed 50 words.

Write short notes on :

1. Linkage.
2. Holandric genes.
3. Pseudo alleles.
4. Sexduction.
5. Genetic drift.
6. Exon and Introns.
7. Apomixis.
8. Hybrid vigor.
9. Probability.
10. Mean.

PART B — (5 × 6 = 30 marks)

Answer ALL questions.

All questions carry equal marks.

Each answer should not exceed 250 words.

11. (a) Give a brief account of linkage and crossing over.

Or

(b) Write an account of sex linked diseases.

12. (a) Give an account of mitochondrial genome.

Or

(b) Give an account of chloroplast genome.

13. (a) Describe the phenomenon "Transformation" in bacterial genetics.

Or

(b) Describe the significance of biochemical genetics in *Neurospora*.

14. (a) Describe the genetic variability and its role in plant breeding.

Or

(b) Describe mutation in plant breeding.

15. (a) Define Eugenics. Describe Human Karyotypes.

Or

(b) Chi-square test for goodness of fit - Discuss.

PART C — (5 × 10 = 50 marks)

Answer ALL questions.

All questions carry equal marks.

Each answer should not exceed 500 words.

16. (a) Write an essay on "Extranuclear inheritance" and their significance.

Or

(b) Write an essay on sex-determination in plants.

17. (a) Write an essay on "bacterial transduction".

Or

(b) Write an essay on male sterility in corn.

18. (a) Define antigen-antibody complex. Explain genetic theories of antibody formation.

Or

(b) Give an account of bacterial genetics.

19. (a) Write an account of methods of breeding in cross pollinated crops.

Or

(b) Write an essay on polyploidy in plant breeding.

20. (a) Give an account of gene concept and function.

Or

(b) Explain :

(i) Standard deviation and standard error.

(ii) Null hypothesis.

(iii) Student's "t" test.

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