



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION - PLANT BIOLOGY AND PLANT BIOTECHNOLOGY

FIFTH SEMESTER – NOVEMBER 2015

PB 5522 - GENETICS & PLANT BREEDING

Date : 05/11/2015
Time : 09:00-12:00

Dept. No.

Max. : 100 Marks

PART - A

ANSWER THE FOLLOWING, EACH WITHIN 50 WORDS ONLY:

(10 x 2 = 20 marks)

1. Define allele.
2. What are Lethal genes?
3. Define Linkage.
4. What are Multiple alleles?
5. What is the fundamental unit of heredity?
6. Name the Purine and Pyrimidine Nitrogen bases.
7. What is Pericentric inversion?
8. Name any two Physical mutagens.
9. What is Emasculation?
10. Define Heterosis.

PART - B

ANSWER THE FOLLOWING, EACH WITHIN 500 WORDS.

DRAW DIAGRAMS WHEREVER NECESSARY:

(5 x 7 = 35 marks)

11. a) Explain incomplete dominance and Pleiotropism with one example.
(OR)
b) Give an account of application of genetics.
12. a) Explain Complementary genes with a suitable example.
(OR)
b) Give a brief account of the procedure used in preparing a Chromosome map with the help of a three point test cross.
13. a) Describe the structure of DNA.
(OR)
b) Explain lac operon model of gene expression.
14. a) Write the characteristics of Down syndrome.
(OR)
b) Explain Mismatch and Excision repair mechanism of DNA.
15. a) Explain the hybridization technique to produce hybrid plants.
(OR)
b) Write on the importance of Plant breeding.

PART - C

ANSWER ANY THREE OF THE FOLLOWING, EACH WITHIN 1200 WORDS.

DRAW DIAGRAMS WHEREVER NECESSARY:

(3 x 15 = 45 marks)

16. Explain the Laws of Mendel with an example.
17. Write an essay on sex determination in plants.
18. Summarise the process of protein synthesis.
19. Give an account of the types and significance of Mutation.
20. What is Polyploidy? Write its role in Plant breeding.

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