LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – **PLANT BIOLOGY AND PLANT BIOTECHNOLOGY**

FIFTH SEMESTER – **NOVEMBER 2017**

PB 5522 – GENETICS & PLANT BREEDING

Date: 03-11-2017 Dept. No. Max. : 100 Marks

Time: 09:00-12:00

PART - A

ANSWER THE FOLLOWING, EACH WITHIN 50 WORDS. (10 x 2 =20 Marks)

1. What is test cross?
2. Define allele.
3. What is haemophilia?
4. Define epistasis.
5. What is translation?
6. Define cistron.
7. What is translocation?
8. Define mutagens.
9. Define emasculation.
10. Write any two advantages of pure line selection?

PART - B

ANSWER THE FOLLOWING, EACH WITHIN 500 WORDS. DRAW DIAGRAMS AND FLOWCHARTS WHEREVER NECESSARY. (5 X 7 = 35 MARKS)

11.a. Explain monohybrid cross with an example

(OR)

b. Give a brief note on lethal genes

12.a. Describe complementary genes with an example

(OR)

b. Illustrate the mechanism of crossing over

13.a. Write a brief note on DNA replication in Prokaryotes.

(OR)

b. Explain the evidences for DNA as the genetic material.

14. a. Enumerate the significance of mutation.

(OR)

b. Write short notes on Down syndrome.

15.a. Write the objectives of plant breeding.

(OR)

b. Illustrate mass selection in cross pollinated crops

PART - C

ANSWER ANY THREE OF THE FOLLOWING, EACH WITHIN 1200 WORDS. DRAW DIAGRAMS AND FLOWCHARTS WHEREVER NECESSARY.

(3 X 15 = 45 MARKS)

16. Explain the law of independent assortment with an example.
17. Explain linkage in maize.
18. Describe the regulation of gene expression in prokaryotes.
19. Write an essay on chromosomal aberrations.
20. Describe the role of polyploidy in plant breeding.

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