

**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**



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

**FIFTH SEMESTER – NOVEMBER 2019**

**16/17UPB5MC02/ PB 5522 – GENETICS AND PLANT BREEDING**

Date: 31-10-2019

Dept. No.

Max. : 100 Marks

Time: 09:00-12:00

**PART – A**

ANSWER THE FOLLOWING, EACH WITHIN 50 WORDS.

**(10×2= 20 Marks)**

1. What are lethal genes?
2. Define Peliotropism
3. Define Linkage.
4. What are Multiple alleles?
5. Comment on RNA Polymerase.
6. Distinguish between codon and anticodon.
7. Define Transposan.
8. Define Translation.
9. What is gene pool?
10. Comment on clonal selection.

**PART – B**

ANSWER THE FOLLOWING, EACH WITHIN 500 WORDS. DRAW DIAGRAMS WHEREVER NECESSARY

**(5×7= 35 Marks)**

11.a) Explain the incomplete dominance.

**(OR)**

b) Describe the laws of Mendel.

12. a) Explain sex linked inheritance with one example.

**(OR)**

b) Explain the steps involved in crossing over. Add a note on its types.

13. a) Explain semi-conservative model of DNA replication.

**(OR)**

b) Explain the *lac* operon model on gene regulation.

14. a) Explain the types of DNA repair mechanisms.

**(OR)**

b) Briefly describe genetic disorders.

15. a) Describe pureline selection in plant breeding.

**(OR)**

b) Explain the steps involved in hybridization technique.

PART – C

ANSWER ANY THREE OF THE FOLLOWING, EACH WITHIN 1200 WORDS. DRAW DIAGRAMS WHEREVER NECESSARY (3×15= 45 Marks)

16. Describe the dihybrid cross with an example.
17. Explain the process of genetic recombination in *Neurospora crassa*.
18. Explain the process of protein synthesis in prokaryotes.
19. Write an essay on mutagens and mutations.
20. Write an essay on polyploidy and its role in plant breeding.

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