

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



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

**FIFTH SEMESTER – NOVEMBER 2016**

**PB 5522 – GENETICS & PLANT BREEDING**

Date: 03-11-2016

Dept. No.

Max. : 100 Marks

Time: 09:00-12:00

**PART - A**

*Answer the following, each within 50 words*

*(10 x 02 = 20 marks)*

1. Define phenotype.
2. What is codominance?
3. What is epistasis?
4. Define linked genes.
5. Define transformation.
6. What is recon?
7. Mention any four symptoms of Down's syndrome.
8. What is inversion?
9. Mention any two uses of *colchicines*.
10. What is heterosis?

**PART - B**

*Answer the following, each within 500 words; draw diagrams and flow charts wherever necessary*

*(5 x 7 = 35 marks)*

11. a. Explain incomplete dominance with an example.  
(OR)  
b. What are lethal genes? Explain with an example.
12. a. Explain complementary genes with suitable an example.  
(OR)  
b. Write notes on tetrad analysis in *Neurospora*.
13. a. DNA is the genetic material - Discuss  
(OR)  
b. Describe the various process involved in replication of DNA.
14. a. Give a brief note on transposable elements in plants.  
(OR)  
b. Comment on SOS repair mechanisms.
15. a. Write the objectives of plant breeding.  
(OR)  
b. Describe clonal selection.

## PART - C

*Answer any three of the following, each within 1200 words; draw diagrams and flow charts wherever necessary* (3 x15 = 45 marks)

16. Explain the law of independent assortment with suitable example.
17. Explain sex linked inheritance in man.
18. Describe the gene regulation in prokaryotes.
19. Explain in detail about mutation.
20. Describe the techniques involved in hybridization.

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