



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

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

**FIFTH SEMESTER – APRIL 2017**

**PB 5516- GENETICS, PLANT BREEDING AND EVOLUTION**

Date: 22-04-2017  
01:00-04:00

Dept. No.

Max. : 100 Marks

**PART – A**

*Answer the following, each within 50 words.*

**(10×2= 20 marks)**

1. What are multiple alleles?
2. Define complementary gene.
3. Define a recon.
4. What are Okazaki fragments?
5. Define Euploidy.
6. What are thymine dimers?
7. Define heterosis.
8. What are hybrids?
9. Define gene pool.
10. Comment on speciation.

**PART – B**

*Answer the following, each within 500 words. Draw diagrams and flow charts wherever necessary*  
**(5×7= 35 marks)**

11. a) What are lethal genes? Explain with an example

**(OR)**

b) Define epistasis and explain with an example.

12. a) Write short notes on DNA polymerases.

**(OR)**

b) Brief about post transcriptional modifications.

13. a) Briefly explain Klinefelter's syndrome.

**(OR)**

b) Write short notes on mutagens.

14. a) Explain pure line selection in plant breeding.

**(OR)**

b) Explain clonal selection in plant breeding.

15. a) Explain the principles of Lamarckism.

**(OR)**

b) Explain Darwin's theory of natural selection.

PART – C

*Answer any three of the following, each within 1200 word. Draw diagrams and flow charts wherever necessary .*  
**(3×15= 45 marks)**

16. With the help of a dihybrid cross, explain the law of independent assortment.
17. Define and explain about transposable elements of plants with an example.
18. Describe the various DNA repair mechanisms.
19. Describe in detail about the steps involved in hybridization technique.
20. Give a detailed account on the concept of speciation and isolation mechanisms.

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