LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

**B.Sc.** DEGREE EXAMINATION – **PLANT BIOLOGY & PLANT BIO-TECH.**

FIFTH SEMESTER – NOVEMBER 2012

# PB 5516/5510/5506 - GENETICS, PLANT BREEDING AND EVOLUTION

Date : 03/11/2012 Dept. No. Max. : 100 Marks

Time : 9:00 - 12:00

**PART – A**

**ANSWER THE FOLLOWING, EACH WITHIN 50 WORDS ONLY: (10x 2=20 marks)**

1. Define Genes
2. What is test Cross?
3. Define Muton.
4. Mention the role of Stop codons.
5. What is Thymine Dimer?
6. What are Mutagens?
7. Define emasculation.
8. What is mass selection?
9. Enumerate the Principles of Darwinism.
10. What is a gene pool?

**PART – B**

**ANSWER THE FOLLOWING, EACH ANSWER WITHIN 500 WORDS,**

**DRAW DIAGRAMS, FLOW CHARTS WHEREVER NECESSARY: (5 X 7 = 35 marks)**

1. (a) Compare and contrast incomplete dominance and co dominance with suitable examples.

(OR)

(b) With the help of a checker Board explain law of independent assortment.

1. (a) Describe the structure of a DNA.

(OR)

(b) Explain the steps involved in post transcriptional modification.

1. (a). What is ploidy? Briefly explain allopolyploidy with examples.

(OR)

(b). Write short notes on any two types of chromosomal aberrations.

1. (a). Enumerate the main objectives of plant breeding.

(OR)

(b). Give an account on pure line selection and its importance.

1. (a). Briefly explain mutation theory.

(OR)

(b). Explain Lamarck’s theory of organic evolution.

**PART – C**

**ANSWER ANY THREE OF THE FOLLOWING, EACH WITH IN 1200 WORDS;**

**DRAW DIAGRAMS, FLOWCHARTS WHEREVER NECESSARY: (3 X 15 = 45 marks)**

1. Discuss cytoplasmic inheritance with the help of suitable examples.
2. Explain the steps involved in translation of mRNA in to polypeptide chain.
3. Write notes on the mechanism of DNA repair.
4. What is hybridization? Explain the types and steps involved.
5. Give a detailed account on the concept of speciation and isolation according to synthetic theory.

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