



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FIFTH SEMESTER – APRIL 2017

PB 5522- GENETICS & PLANT BREEDING

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

Dept. No.

Max. : 100 Marks

Part - A

Answer the following, each within 50 words.

(10x2=20 marks)

1. Define Codominance.
2. What are lethal genes?
3. State the law of independent assortment.
4. What are complementary genes?
5. Differentiate cistron from recon.
6. Write notes on frame shift mutation.
7. Name any four chemical mutagens.
8. What is Mismatch repair and how is a mismatch corrected?
9. Comment on clonal selection.
10. What is bagging technique?

Part - B

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

(5x7=35 marks)

11. a) For a particular plant, round and yellow colour seeds result from a dominant gene (RY) while wrinkled and green seeds result from a recessive gene (ry). Perform a dihybrid cross with plants heterozygous for both traits and analyse your answer using a Punnet Square.

(OR)

- b) Give a brief account on the scope and applications of genetics.

12. a) Write a short note on colour blindness and haemophilia.

(OR)

- b) Explain chromosome theory of Sex determination.

13. a). Give an account on different enzymes involved in DNA replication.

(OR)

- b) Enlist the salient features of genetic code.

14. a) Explain the term Duplication. Add a note on Bar eye in Drosophila.

(OR)

- b) Write a brief note on Physical Mutagens.

15. a) Highlight the main objectives of Plant Breeding.

(OR)

- b) Outline the procedure involved in Pure-line selection.

PART-C

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

16. Write detailed account on monohybrid cross and its modifications.
17. Explain the cytoplasmic inheritance with suitable examples.
18. Describe in detail the process of transcription in Prokaryotes.
19. With reference to Chromosomal aberration answer in detail the following-
 - i) Translocation
 - ii) Inversion
 - iii) Deletion
20. Define hybrid vigour. Discuss on its effects and causes.
