

LOYOLA COLLEGE (AUTONOMOUS) CHENNAI – 600 034

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

FIFTH SEMESTER – NOVEMBER 2024



PB 5516 – GENETICS, PLANT BREEDING AND EVOLUTION

Date: 11-11-2024

Dept. No.

Max. : 100 Marks

Time: 09:00 am-12:00 pm

SECTION A

Answer ANY FOUR of the following, each within 500 words. Draw diagrams and flowcharts wherever necessary

4 x 10 = 40 Marks

1. State and explain the law of segregation using monohybrid cross with an example.
2. Describe sex linked inheritance with a suitable example.
3. Give a brief account on polygenic inheritance.
4. Describe the process of DNA replication in prokaryotes.
5. Enumerate the salient features of genetic code.
6. Write briefly about photo-reactivation and excision repair.
7. Write notes on mass selection. Add a note on its merits and demerits.
8. Give an account on Lamarck's theory of evolution.

SECTION B

Answer ANY THREE of the following, each within 1000 words. Draw diagrams and flowcharts wherever necessary

3 x 20 = 60 Marks

9. Explain the Law of Independent assortment with an example.
10. Write a detailed account on any two types of non-allelic gene interactions.
11. Elaborate the structure and organization of DNA.
12. Describe the different types of chromosomal aberrations.
13. Give an account on hybridization techniques in plants.
14. Write an essay on the theory of natural selection.

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