LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FIFTH SEMESTER – **NOVEMBER 2015**

PB 5518 - PLANT BIOTECHNOLOGY

Date : 25/09/2015 Dept. No. Max. : 100 Marks
Time : 01:00-04:00

PART – A

Answer the following, each within 50 words only: (10 x 2 = 20)

1. Define totipotency.
2. Distinguish between hybrid and cybrid.
3. What is Ti plasmid.
4. Mention the role of Bromophenol blue.
5. Define genomic library.
6. Define callus.
7. Mention any two Chemofusagents.
8. Define acclimatization.
9. What are transgenic plants?
10. Define plant nuclear genome.

PART – B

Answer the following each answer with 500 words. Draw diagrams wherever necessary: (5 x 7 = 35)

11. a) Write about the sterilization methods used in plant tissue culture.
    (OR)
    b) Bring out the uses and benefits of suspension culture.

12. a) Write about the basic steps involved in Micro propagation.
    (OR)
    b) Explain the phenomenon of somoclonal variation. Mention the importance.

13. a) Give an account of the mechanisms involved in transformation of plants by *Agrobacterium tumifaciens.*
    (OR)
    b) Describe the genetic organization and function of Ti plasmid.

14. a) Define restriction enzyme. What are the types of restriction enzymes? Write about its uses.
    (OR)
    b) Explain southern blotting technique.

15. a) Highlight upon the properties, types and uses of molecular markers.
    (OR)
    b) Write about any one method of plant genome sequencing.

PART – C

Answer any **THREE** of the following each; Answer within 1200 words. (3 x 15 = 45)
Draw diagrams wherever necessary:

16. What are culture media? Give the composition and types of culture media used in plant tissue culture and add a note on the role of hormone on culture.

17. What are synthetic seeds? Give the methods of synthetic seed production and bring out its application.

18. Explain in detail about molecular interactions between *Rhizobium* and leguminous roots.

19. Write an account of gene delivery systems.

20. Describe the steps involved in transgenic plant production.

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