



# LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

## M.Sc.DEGREE EXAMINATION –BIOTECHNOLOGY

THIRD SEMESTER – APRIL 2019

### 17PBT3MC02– PLANT BIOTECHNOLOGY

Date: 05-04-2019  
Time: 09:00-12:00

Dept. No.

Max. : 100 Marks

#### PART – A

#### Answer ALL the Questions

##### I. Choose the correct answer

(5 x 1 = 5 Marks)

1. Protoplast are the cells devoid of  
a) Protoplasm      b) Cell membrane      c) Cytoplasm      d) Cell wall
2. Which among the following is called as “natural genetic engineer”  
a) *Agrobacterium radiobacter*      b) *Agrobacterium tumefaciens*  
c) *Agrobacterium vitis* d) *Thermus aquaticus*
3. Novel gene which is used against insect resistance  
a) Bt      b) Glucanase      c) Thionin      d) GUS
4. Which of the following is a secondary metabolite?  
a) Phytochrome      b) Vinblastine      c) Chitin      d) Fungi
5. Regulating body which is concerned with environmental safety  
a) FDA      b) MoEF      c) EPA      d) EU

##### II. State whether the following are true or false.

(5x1=5 Marks)

6. Organogenesis is formation of shoots and roots.
7. Acetosyringone enhances *vir* gene expression.
8. DNA injected directly into cells using micromanipulator is called gene pyramiding.
9. Benzofurans are terpenoids in plants.
10. Intellectual property rights includes patent.

##### III. Complete the following

(5 x 1= 5 Marks)

11. \_\_\_\_\_ is an excised piece of leaf or stem tissue used in micropropagation.
12. Transformation method which use gold particles coated with DNA is called \_\_\_\_\_.
13. Herbicide tolerance is an example of \_\_\_\_\_ stress.
14. \_\_\_\_\_ is a fungal resistance gene produced from plants.
15. GEAC stands for \_\_\_\_\_.

##### V. Answer the following within 50 words

(5 x 1 = 5 Marks)

16. What is totipotency?
17. Expand RAPD.
18. What is golden rice?
19. Mention any one alkaloid extracted from plants.
20. What is biosafety of GM food?

**PART B**

**Answer the following each within 500 words.**

**(5 x 8 = 40 marks)**

**Draw diagrams wherever necessary**

21. (a) Write a note on the different constituents of MS media.

OR

(b) Give a short note on protoplast isolation.

22. (a) Explain the *Agrobacterium*-method of gene transfer.

OR

(b) Briefly write about the *in vitro* breeding tools used in crop improvement.

23. (a) Give a note on insect resistance in crops.

OR

(b) Discuss the  $\beta$ -carotene pathway in rice.

24. (a) Write a short note on bacterial resistant genes.

OR

(b) Distinguish between quantitative and qualitative estimation of phytochemicals.

25. (a) Give a note about biosafety and ethical issues of genetically modified crops.

OR

(b) Write briefly on Farmer's Right Act.

**PART – C**

**Answer any TWO of the following, each within 1500 words.**

**(2 x 20 = 40 Marks)**

**Draw diagrams wherever necessary.**

26. Write and account on meristem culture and its importance.

27. Write an essay on transgenic plants and its applications.

28. Give and account on the biolistic method used in raising fungal resistant crops.

29. Discuss the mechanism and importance of plant- pathogen interaction.

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