TDC (CBCS) Even Semester Exam., 2023

BOTANY

(Honours)

(6th Semester)

Course No. : BOTHCC-602T

(Plant Biotechnology)

Full Marks : 50
Pass Marks : 20

Time : 3 hours

The figures in the margin indicate full marks for the questions

SECTION—A

Answer any *ten* of the following questions : 2×10=20

1. What is totipotency? Who discovered it?

2. What do you mean by basal medium? Give example.

3. Enlist the advantages of cryopreservation.

4. What are cosmids? Give example.

5. What are bifunctional vectors?

6. Give example of two gram-negative bacteria where Ti plasmids are found.

7. What is colony hybridization?

8. What do you mean by cDNA library?

9. Discuss the principle of polymerase chain reaction (PCR).

10. What are selectable markers?

11. Enlist four methods of gene transfer.

12. What are reporter genes?

13. Which technology was employed to develop Flavr Savr tomatoes?

14. Which is the highest among all biosafety levels known?

15. What are superbugs? Who developed it?

SECTION—B

Answer any *five* of the following questions : 6×5=30

16. What do you mean by secondary metabolites? How tissue culture method can enhance secondary metabolite production?

17. What is somatic embryogenesis? Differentiate between somatic and zygotic embryogenesis.

18. What are restriction endonucleases? Discuss the different types and the functions of restriction endonuclease.

19. Write an explanatory note on PCR mediated gene cloning.

20. What are shuttle vectors? Give example and function of shuttle vectors.

21. What is gene construct? Discuss the various components of gene constructs. How do they differ from vectors?

22. Write short notes on the following :

    (a) Electroporation

    (b) Microinjection

23. Give an account of agrobacterium mediated gene transfer.

24. Write notes on the following :

(a) Edible vaccines (Oral vaccine)

(b) Golden rice

25. What is bioremediation? Discuss various transgenic approaches for bioremediation.

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