

2023/TDC(CBCS)/EVEN/SEM/ BOTHCC-602T/231

TDC (CBCS) Even Semester Exam., 2023

BOTANY

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(Honours)

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(6th Semester)

Course No.: BOTHCC-602T

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(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.

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(Turn Over)

(2)

- 3. Enlist the advantages of cryopreservation.
- 4. What are cosmids? Give example.
- 5. What are bifunctional vectors?
- 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?
- 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?

(Continued)

(3)

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.
- 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.

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24. Write notes on the following:

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- (a) Edible vaccines (Oral vaccine)
- (b) Golden rice
- 25. What is bioremediation? Discuss various transgenic approaches for bioremediation.

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