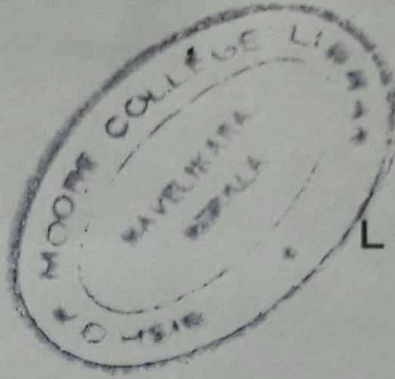


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L - 5474

Reg. No. :

Name :

Fourth Semester M.Sc. Degree Examination, March 2021

Botany

Special Paper II — Elective

BO 242 a — BIOTECHNOLOGY

(2019 Admission)

Time : 3 Hours

Max. Marks : 75

Instructions : Draw diagrams and illustrate with examples wherever necessary.

- I. Answer the following questions.
1. What is antisense technology?
2. EPSPS Pathway.
3. Ri Plasmid.
4. Binary vector.
5. Monoclonal antibody.
6. Vitrification.
7. Hardening of tissue culture raised plants.
8. Vertical resistance.
9. α - amylases.
10. Embryo rescue.

(10 × 1 = 10 Marks)

P.T.O.



II. Answer **all** the following questions in not more than **50** words.

11. (a) Explain the strategies used in making a disarmed Ti plasmid.

OR

(b) What is a frame shift mutation?

12. (a) Explain the utility of adapters in gene cloning.

OR

(b) What are marker genes?

13. (a) Explain pyrosequencing.

OR

(b) Differentiate between RFLP and RAPD.

14. (a) Explain the process of developing a gene knockout.

OR

(b) What is a cybrid? How is it used in plant breeding?

15. (a) Explain bulbosum method.

OR

(b) What is biotransformation?

(5 × 2 = 10 Marks)

III. Answer **all** the following questions in not more than **150** words.

16. (a) Explain the encapsulation dehydration method of cryopreservation.

OR

(b) How does bioaugmentation of microbial products achieved?



17. (a) Explain the role of transposable elements in plant improvement.

OR

- (b) Explain the strategies for developing pulses with essential aminoacids.

18. (a) Describe two important variants of PCR.

OR

- (b) Explain Callus. How somatic embryos are formed.

19. (a) What is buffer zone in transgenic science? How is it related to biological containment?

OR

- (b) Explain northern-western blotting with its applications.

20. (a) Explain the process of electroporation for introducing a new gene fragment into a protoplast.

OR

- (b) What are PR proteins? Explain its application in agriculture.

21. (a) What are reporter genes? Name two and explain their mode of action.

OR

- (b) What are edible vaccines? What are its advantage and disadvantages?

22. (a) Explain molecular farming with examples.

OR

- (b) Explain with example viral coat-protein mediated immunity in plants.

(7 × 5 = 35 Marks)

IV. Answer all the following questions in not more than 250 words.

23. (a) Explain the mechanism of inducing salt tolerance in plants.

OR

(b) Explain different techniques for developing a transgenic plant.

24. (a) What are single cell proteins? How the eukaryotic cells are engineered to get overexpress valuable proteins?

OR

(b) What is herbicide resistance? Explain the strategies used in developing herbicide tolerant plants.

(2 × 10 = 20 Marks)

