

**MSc DEGREE EXAMINATION OCTOBER 2015**

SEMESTER: 3, SUBJECT: BOTANY

COURSE: P3BOTT11 - BIOTECHNOLOGY

Time: Three Hours

Max. Marks: 75

I. Answer **any eight** questions briefly; each question carries **2 marks**

1. Who is the father of plant tissue culture?
2. Distinguish between T-cells and B-cells.
3. What is genome annotation?
4. Distinguish between structural genes and regulatory genes.
5. Name two enzymes that made DNA cloning possible.
6. How the protoplasts can be isolated?
7. What do you mean by DNA databank?
8. Comment on epitopes.
9. What are shuttle vectors?
10. What is genbank?
11. What is submerged fermentation?
12. What is DNA foot printing?

(2 x 8 = 16)

II. Answer **any seven** questions; each question carries **5 marks**

13. What is genome sequencing?
14. Distinguish between batch culture and continuous culture.
15. Why hardening is necessary for tissue culture derived plants?
16. What are the characteristics of a vector?
17. Write a note on callus culture.
18. Distinguish between the role of auxin and cytokinin in tissue culture.
19. Differentiate direct and indirect organogenesis.
20. What are the applications of genetic engineering in medicine?
21. What is cDNA synthesis? Describe the protocol.
22. Distinguish between FISH and GISH.

(5 x 7 = 35)

III. Answer **any two** questions; each question carries **12 marks**

23. Write a note on blotting techniques.

OR

24. What is genetic engineering? List the steps involved in rDNA technology?

25. Describe the protocol for protoplast isolation, culture and plant regeneration.

OR

26. Describe the various steps involved in micropropagation. What are the applications of micropropagation? (12 x 2 = 24)

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