

--	--	--	--	--	--	--	--	--	--

Seventh Semester B.E. Degree Examination, Dec.2018/Jan.2019
Upstream Process Technology

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions, selecting
atleast TWO questions from each part.**

PART – A

- 1 a. Describe the principle and applications of plant tissue culture, with suitable examples. (10 Marks)
- b. Write an extended note on M.S. media and rephrase on organogenesis. (10 Marks)
- 2 a. What are haploids? Describe the technique of plant regeneration. (10 Marks)
- b. Write short note on : (10 Marks)
 - (i) Diploidization
 - (ii) Endosperm culture & its application
- 3 a. Elucidate the immobilization and hairy-root culture techniques for the production of secondary metabolites from plant cells. (10 Marks)
- b. Compare the advantages and disadvantages of secondary metabolites in industrial applications. (10 Marks)
- 4 a. Organize the properties of Natural and Synthetic media. (10 Marks)
- b. Write short note on : (10 Marks)
 - (i) Stem cell isolation
 - (ii) Fibroblast culture.

PART – B

- 5 Write short notes on : (20 Marks)
 - (i) Therapeutic proteins
 - (ii) Production of monoclonal antibodies
 - (iii) Steps in hybridoma technology
 - (iv) Application of monoclonal antibodies.
- 6 a. Summarize the properties to be considered during media preparation and culture maintenance. (12 Marks)
- b. Write a note on : (08 Marks)
 - (i) Antibiotic sensitivity
 - (ii) Replica plating technique.
- 7 a. Infer on the microbiology behind brewing operations, taking suitable examples from distilled and non-distilled beverages. (10 Marks)
- b. Categorize the various strategies to optimize yield in fermentation operations. (10 Marks)
- 8 Write short notes on: (20 Marks)
 - a. Microbes and industrial waste management
 - b. Genetically engineered organisms for bioprocessing and its impact
 - c. Efficiency of microbes in leaching operations
 - d. Mineral cycles in ecological recycling.

* * * * *