

This question paper contains 3 printed pages]

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S. No. of Question Paper : 5644

Unique Paper Code : 2533012011

Name of the Paper : Microbial Biotechnology

Name of the Course : Microbiology

Semester : Part III, Semester VI

Duration : 2 Hours

Maximum Marks : 60

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt any five questions.

All questions carry equal marks.

1. Write short notes on any *three* of the following : 3×4=12
 - (a) Microbes in Oil spill Cleanup
 - (b) Production of Xanthan gum
 - (c) Bioplastics
 - (d) Bt brinjal.
2. (a) Describe the production of *Rhizobium* based biofertilizer and its importance in soil fertility. 4

P.T.O.

- (b) Briefly explain the production of high fructose corn syrup. 4
- (c) Discuss the role of microorganisms in biotransformation for the production of steroids. 4
3. (a) Differentiate between the following pairs : 2×4=8
- (i) Prokaryotic and Eukaryotic expression systems
- (ii) Laboratory and Industrial scale bioreactors
- (b) Discuss the principle and application of cholesterol oxidase-based biosensors. 4
4. (a) Briefly explain the production of recombinant Human growth hormone. 4
- (b) Discuss the benefits of Golden rice. 2
- (c) What is biodiesel ? How is it produced ? 4
- (d) Discuss the contribution of Bharat Biotech in Research and Development. 2
5. (a) What are edible vaccines ? Discuss their advantages over traditional vaccines. 4
- (b) Define bioleaching. Discuss the role of microorganisms in carrying out recovery of copper. 4
- (c) Discuss the principle of Covaxin and Covishield vaccines. 4

6. Explain the following terms (any *six*) :

6×2=12

- (a) RNAi technology
- (b) SCP
- (c) GMO
- (d) Biopigments
- (e) Biocontrol agents
- (f) Synthetic meat
- (g) Tissue Plasminogen activator (tPA).

