

[This question paper contains 2 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 9264

J

Unique Paper Code : 2533012011

Name of the Paper : Microbial Biotechnology

Name of the Course : **Microbiology**

Semester : VI – Part III

Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any **five** questions.
3. **All** questions carry equal marks.

1. Explain the following terms (**any 6**) : (2×6=12)

- (a) Golden rice
- (b) Edible vaccine
- (c) Synthetic meat
- (d) Round up ready crops
- (e) Fungal SCP
- (f) Microbial colorant
- (g) Biofuel

2. Write short notes on the following (**any 3**) : (4×3=12)

- (a) Copper bioleaching
- (b) Hepatitis B vaccine
- (c) Microbial transformation of steroids
- (d) Mass production of *Rhizobium* biofertilizer

P.T.O.

3. (a) Compare and contrast the use of prokaryotic and eukaryotic hosts for expression of heterologous proteins. (4)
- (b) Discuss the various types of COVID-19 vaccines. (4)
- (c) What is Bt-brinjal? Discuss its advantages over the traditional variety. (4)
4. (a) Write the names and applications of important products produced by the following biotech industries : (2×2=4)
- (i) Biocon
- (ii) Serum Institute of India
- (b) Explain the strategy for production of recombinant insulin. (4)
- (c) Discuss the use of RNAi technology in developing improved crops. (4)
5. (a) What are the advantages of using microbial systems for mass production of therapeutic products? (4)
- (b) Discuss the principle and application of GOD based biosensors. (4)
- (c) Describe the use of microorganisms in removal of heavy metals from aqueous effluents. (4)
6. (a) Outline the process of production of high fructose corn syrup. (4)
- (b) Give one example of the following (any 4) : (1×4=4)
- (i) Fungal bioinsecticide
- (ii) Microbial source of Xanthan gum
- (iii) Microorganism used for oil spill cleanup
- (iv) Microbial source of bioplastics
- (v) Source of Agar-Agar
- (c) What are the advantages of using microbial fertilizers over chemical fertilizers? (4)