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(c) Define biopesticides. Write their advantages and limitations. (4)

(d) Name one alga used to produce biofuel. (1)

(200)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 6084 H

Unique Paper Code : 2534001203

Name of the Paper : Applications of Microbes in Biotechnology

Name of the Course : Microbiology

Semester : II

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. All questions carry equal marks.
3. Attempt any five questions.

1 (a) Define the following (any six) : (1.5×6=9)

Metabolic engineering, Biotechnology, Xenobiotics.

Bioplastic, Lignocellulose, Biomining, Vaccine.

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- (b) Give an example of producer microorganism of the following (**any three**) : (1×3=3)

Vitamin B12, Streptomycin, Xanthagum, Superbug.

2. (a) What do you understand by transgenic crops? Explain the process of development of any one transgenic crop. (2+4=6)

- (b) Expand the following (**any three**) : (1×3=3)

HFCS, SCID, GEMs PHB

- (c) What is biogas? Name the microorganisms (**any two**) involved in its production. (3)

3. (a) Describe the production of Insulin with the help of a well labelled Diagram. (4)

- (b) Define Bioremediation. Discuss its various types. (4)

- (c) Differentiate between natural and laboratory selected mutants. (4)

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4. (a) Write the detailed method for the production of Covishield vaccine. (4)

- (b) What are secondary metabolites? Give an example and write its application. (4)

- (c) Define biofertilizers. Write their advantages over chemical fertilizers. (4)

5. (a) Explain how high fructose corn syrup is produced using immobilization method? (4)

- (b) Write a short note on gene therapy. (4)

- (c) What do you understand by the term Oil zapper? Elaborate. (3)

- (d) Name any fungus used as biofertilizer. (1)

6. (a) Explain the role of microbes in environment management. (4)

- (b) What are Biosensors? Write their applications. (3)

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