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(b) Describe the production process of algal biofuel.

(4)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 7400

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Unique Paper Code : 2533012011

Name of the Paper : Microbial Biotechnology

Name of the Course : **B.Sc. (Hons.) Microbiology**

Semester : VIII, NEP (Part-IV)

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. Define the following (**any three**) : (3×4=12)

(i) Edible vaccines

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- (ii) Algal biofuel
 - (iii) copper bioleaching
 - (iv) Glucose oxidase biosensors
2. Differentiate between the following **(any three)** :
(3×4=12)
- (i) liquid and carrier-based biofertilizers
 - (ii) insect-resistance crop and virus-resistance crop.
 - (iii) microbial bioremediation and chemical precipitation
 - (iv) bioaccumulation and biosorption
3. (a) What is the production method of Single Cell Protein. (4)
- (b) What is synthetic meat? Enlist the benefits and challenges associated with its use. (4)
- (c) Describe the role of pilot-scale bioreactors in microbial biotechnology. (4)

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4. (a) Illustrate the process of microbial production of therapeutic recombinant human growth hormone. (6)
- (b) Describe the mechanism of microbial transformation of steroids. (6)
5. (a) Explain the role of microorganism in removal of heavy metals from aqueous effluents. (4)
- (b) Explain the process and application of microbial production of beta-carotene. (6)
- (c) What are GMOs? Explain with the help of example. (2)
6. (a) Write the applications of the following : (2×4=8)
- (i) *Bacillus thuringiensis*
 - (ii) *Trichoderma harzianum*
 - (iii) *Acetobacter diazotrophicus*
 - (iv) *Fusarium graminearum*

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