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(c) What do you understand by Metabolic engineering?

(2)

6. (a) Expand the following :

(1×4=4)

HFCS, SCID, PHB, *Bt*

(b) Define biofuel. Describe the process of production of biofuel using lignocellulose waste. (4)

(c) Describe the production of Insulin with the help of a well labelled diagram. (4)

(100)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 5890

H

Unique Paper Code : 2534001203

Name of the Paper : Applications of Microbes in Biotechnology

Name of the Course : Microbiology – Part I

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

1. Define the following giving an example of microorganism used: (any six) (2×6=12)

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- (a) Secondary metabolite
- (b) Microbial Polysaccharides
- (c) GEMs
- (d) Recombinant vaccine
- (e) Superbug
- (f) Xenobiotics

2. Differentiate between : (4×3=12)

- (a) Natural vs laboratory selected mutant
- (b) Genomics vs Proteomics
- (c) Biomining vs Bioleaching

3. (a) What are biofertilizers? Write their advantages over chemical fertilizers. (5)

(b) What do you understand by Bioplastics? Write its uses and one producer organism. (4)

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(c) Give an example of the producer microorganism and application of the following (**any three**)
(1×3=3)

Vitamin B12, Streptomycin, Corn starch, glutamic acid

4. (a) Write the applications of the following microbial products : (2×2=4)

(i) Microbial Biosensors

(ii) OilZapper

(b) What is bioremediation? Discuss its various types. (4)

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

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

(b) Define gene therapy. Explain how viruses can be used for gene therapy giving a suitable example. (6)

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