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K19U2260

Reg. No. : .....

Name : .....

V Semester B.Sc. Degree (CBCSS- Reg./Sup./Imp.) Examination,

November-2019

(2014 Admn. Onwards)

Core Course in Microbiology

5B 07 MCB: MICROBIAL BIOTECHNOLOGY

Time : 3 hours

Max. Marks : 40

**SECTION - A**Answer **all the four** questions.

(4×1=4)

1. The bacterial species commonly used for protease enzyme production is -  
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2. The residue from the first distillation of fermented substrate is known as ---  
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3. The bacterium *Zymomonas mobilis* converts fructose to -----
4. Penicillin G is active against ----- bacteria.

**SECTION - B**Answer very briefly on any **seven** questions out of **ten**.

(7×2=14)

5. Microbes used in industrial production of enzymes.
6. Baculoviruses
7. Continuous fermentation
8. Strain improvement
9. Secondary metabolites
10. Auxotrophic mutants

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11. Cell recycle
12. Penicillinase
13. Biosensors
14. Minimum inhibitory concentrations

### SECTION - C

Answer any **four** questions out of six briefly.

(4×3=12)

15. Scale up of inoculum
16. Chromatography
17. Industrial application of  $\alpha$ -amylase, invertase and neutral protease.
18.  $\beta$ -lactam group of antibiotics.
19. Methods for enzyme immobilization
20. Ethanol production using *Zymomonas* bacterium



### SECTION - D

Answer any **two** questions out of four.

(2×5=10)

21. Describe the design as biofermenter used in industrial settings.
  22. Write a detailed account on bioinsecticides and their applications.
  23. Explain various stages in the conversion of plant products to ethanol.
  24. What are antibiotics? Explain various classes of antibiotics, their sources and mode of action.
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