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**GS-363**

VI Semester B.Sc. Examination, May/June - 2019

**BIOTECHNOLOGY**

**Industrial Biotechnology (Paper-VIII)  
(F+R) (CBCS-2016-17 & Onwards/2013-14 & Onwards)**

Time : 3 Hours

Max. Marks : 70

**Instructions :** Draw neat labelled diagram wherever necessary.

**SECTION - A**

I. Write short notes on the following :

5x2=10

1. Liquid Nitrogen preservation
2. Limitations of submerged fermentation
3. Semi synthetic penicillins
4. Continuous flow reactor
5. Yoghurt

**SECTION - B**

II. Answer **any four** of the following :

4x5=20

6. Improvement of strains by recombinant DNA technology.
7. Write a note on heat sterilization techniques.
8. Explain single cell Oil.
9. Give an account of synthetic media.
10. Describe enzyme immobilization.

P.T.O.

**SECTION - C**

**III.** Answer **any three** of the following : **3x10=30**

11. Explain in detail the steps involved in production of Xanthan gum. Add a note on its applications.
12. Give an account of down stream processing with reference to :
  - (a) Solvent recovery
  - (b) Cell disruption
13. Discuss in detail about microbial enzymes and add a note on its applications in leather and detergent industries.
14. Explain the different types of spargers and impellers. Add a note on its advantages.
15. Describe in detail the production of Glutamic acid and Vitamin B<sub>12</sub>.

**SECTION - D**

**IV.** Answer the following in **one** word or **a** sentence each : **10x1=10**

16. What is trophophase ?
17. Define strain.
18. Write any two raw materials used in solid state fermentation.
19. What are antifoam agents ?
20. Define crystallisation.
21. What is lagering ?
22. Name the strains involved in Idli fermentation.
23. What is benzyl penicillin ?
24. Expand PHB.
25. What is Molasses ?