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**DHANALAKSHMI SRINIVASAN COLLEGE
OF ARTS & SCIENCE FOR WOMEN
(AUTONOMOUS)**



(For Candidates admitted from 2018-2019 onwards)

**UG DEGREE EXAMINATIONS APRIL – 2021
B.SC – BIOTECHNOLOGY
INDUSTRIAL BIOTECHNOLOGY**

Time: 3 Hrs

Max.Marks: 75

PART-A

CHOOSE THE CORRECT ANSWER:

(10×1=10)

1. Which of the following materials is used as a bioplastic?
 - a) Polystyrene
 - b) Polypropylene
 - c) Polyhydroxybutyrate
 - d) Dextran.
2. A Trickling filter is used for:
 - a) Antibiotic production
 - b) Beer production.
 - c) Citric acid manufacturing
 - d) Wastewater treatment.
3. A double spiral heat-exchanger is a:
 - a) Direct heat exchanger
 - b) Indirect heat exchanger.
 - c) A temperature control device
 - d) Thermostat.
4. The importance of yeast extract in the industrial fermenter is:
 - a) Act as vitamin and micronutrient source
 - b) Acts as nitrogen source.
 - c) Acts as carbon source.
 - d) Acts as carbon and vitamin source.
5. A fed -batch process is a:
 - a) Closed system
 - b) Continuous system
 - c) Intermittently fed system
 - d) Biphasic system.
6. Soymeal, peptone and tryptone are used as the source of:
 - a) Carbon source.
 - b) carbon and nitrogen source
 - c) Nitrogen source
 - d) Mineral source.
7. An air -lift fermenter uses:
 - a) An impeller for mixing,
 - b) Air bubbles for mixing the contents.
 - c) Differential density for mixing purpose
 - d) A sparger for mixing the contents.
8. Batch sterilization cycle time consists of:
 - a) Two phases
 - b) Three phases
 - c) Four phases
 - d) Five phases.

9. A spray dryer works on the principle of:
a) Contact drying b) Sublimation c) Lyophilization d) Adiabatic drying.
10. Protected fermentations uses:
a) Sterilized media b) Pasteurized media
c) Pasteurized media with low pH. d) Unsterilized media.

PART - B

ANSWER ALL THE QUESTIONS:

(5×7=35)

11. a) Explain the principles of microbial growth.

(OR)

b) Discuss about the fed-batch and continuous cultures.

12. a) Explain the types of bioreactors.

(OR)

b) Discuss about the advantages and disadvantages of solid substrate.

13. a) Analyse the strain selection of upstream process.

(OR)

b) Explain the extraction and separation of downstream process.

14. a) Discuss about the application of enzymes.

(OR)

b) What is enzyme technology and explain the nature of enzymes?

15. a) How is Industrial applications used in biotechnology field?

(OR)

b) Explain the microbial process for immunization.

PART - C

ANSWER ANY THREE QUESTIONS

(3×10=30)

16. Explain the ways of growing microorganisms.

17. What is mean by bioreactor and explain the working operation of bioreactors?

18. Write in detail about the upstream process.

19. List out the industrial applications of immobilized enzymes.

20. Discuss about the industrial and medical applications in biotechnology.