



BCF-003-001517

Seat No. _____

B. Sc. (Sem. V) (CBCS) Examination

August – 2021

BT - 501 : Bioprocess And Biochemical Engineering

Faculty Code : 003

Subject Code : 001517

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

Instructions:

- (1) Figures in the right indicate marks.**
- (2) Draw the figure wherever necessary.**
- (3) Write answers in main answer sheet.**

1 Objective questions: (Each carry one mark)

20

1. Freeze drying method of culture preservation is also known as lyophilization. TRUE/FALSE.
2. Agitation device is called as _____.
3. Bromine inhibitor inhibits the chloroletra cyclin production during tetracyclin terminally. TRUE/FALSE.
4. Cross filtration reduce tendency of clogging. TRUE/FALSE.
5. Which device protect the vortex formation in fermentation?
6. Give two examples of strain improvement product by rDNA technology in fermentation.
7. Auxanography technique can be used for detecting microorganism able to produce extracellular growth factor. TRUE/FALSE.
8. What is the aim of sparger?
9. Full form of CSTF is _____.
10. The presence precursor may direct the synthesis of only one binding of product among all possible variety of product. TRUE/FALSE.
11. _____ refers to the recovery and the purification of biosynthetic products, from natural sources, including the recycling of salvageable components and the proper treatment and disposal of waste.
12. Biomass-based raw materials are by far the most applied feedstock's for fermentation. TRUE/FALSE.
13. Full form of PFR _____.
14. Full form of SSF _____.
15. Ultrasonicator is not used to disruct cell wall in ultrasonication. TRUE/FALSE.
16. Penicillin fermentation is carried out aerobically by submerged aerated fermentation process. TRUE/FALSE.

17. Vitamin B12 is also known as _____.
18. Alcohol fermentation is aerobic pathway.TRUE/FALSE.
19. A _____ is an analytical method to determine concentration or potency of a substance by its effect on living cells or tissues.
20. _____ is a microbiological culture which actually performs fermentation.

2. (A) write any three out of six: 06

1. Enlist methods of culture preservation.
2. What is Secondary screening?
3. What is the difference between Fermenter and Bioreactor?
4. Define: Starter culture.
5. Define: Aeration.
6. Define: Agitation.

(B) write any three out of six: 09

1. Explain primary screening of industrially important microorganism.
2. Draw well labelled diagram of fermenter with its basic functions.
3. Explain basic concept of growth.
4. Write application of rDNA technique in strain construction.
5. Describe raw materials used in fermentation media.
6. Explain primary and secondary metabolites.

(C) write any two out of five: 10

1. Explain media optimization.
2. Explain types of bioreactors.
3. Write a detail note on formulation of media.
4. Write a note on Starter culture.
5. Explain Techniques for preservation and storage of cultures.

3. (A) write any three out of six: 06

1. What is Distillation?
2. Enlist methods for cell disruption.
3. What is Bioassay?
4. How filtration helps in product recovery?
5. Define fermentation Economics.
6. Write the raw materials used in lysine fermentation.

(B) write any three out of six: 09

1. Explain extraction and separation of product by centrifugation.
2. Give overview of downstream processing.
3. Write a note on purification of product by chromatography.
4. Explain Immobilization Techniques.
5. Explain Flocculation and Flootation.
6. Write a note on Solvent-Solvent extraction.

C) write any two out of five:

10

1. Write a detailed note Automation process.
 2. Explain Fermentation process of alcohol.
 3. Explain Fermentaion process of amino acids.
 4. Explain Sterilization of media and equipments.
 5. Write a detailed note on solid state fermentation.
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