



**D-003-001517**

Seat No. \_\_\_\_\_

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

**March – 2022**

**BT-501 : Bioprocess And Biochemical Engineering**

**Faculty Code : 003**

**Subject Code : 001517**

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

[Total Marks : 70

1 Answer the following question in one word : **20**

- (1) UV light is \_\_\_\_\_ mutagen
- (2) Antibiotics is \_\_\_\_\_ metabolite
- (3) Skim milk is used as \_\_\_\_\_ in preservation
- (4) \_\_\_\_\_ is Baker's yeast
- (5) Growth is defined as increase in cell mass, density and \_\_\_\_\_
- (6) Oil is used as \_\_\_\_\_ agent in media
- (7) Rheology is the study of \_\_\_\_\_
- (8) Restriction endonuclease is used as \_\_\_\_\_ in rDNA
- (9) Corn steep liquor used in penicillin production provides \_\_\_\_\_
- (10) Heat labile compounds are generally sterilized by \_\_\_\_\_
- (11) HPLC stands for \_\_\_\_\_
- (12) *Corynebacterium glutamicum* is used for the production of \_\_\_\_\_
- (13) Photoreactivase enzyme is used for the repair of \_\_\_\_\_
- (14) Pharmamedia is used as a \_\_\_\_\_ source in fermentation media
- (15) For immobilization the support matrix should be in \_\_\_\_\_ nature
- (16) \_\_\_\_\_ strain is used for the production of Citric acid.

- (17) \_\_\_\_\_ is a measure of the fractional reduction in viable organism count produced by heat and time regime
- (18) Pitching means to \_\_\_\_\_
- (19) \_\_\_\_\_ is used in fermenter to prevent vortex formation
- (20) \_\_\_\_\_ detergent is used to break the cell wall

**2** (A) Write any **three** out of six : **6**

- (1) Define Primary and secondary screening
- (2) What is tautomerization?
- (3) What is Monod equation
- (4) What is sterilization?
- (5) Define bioassay
- (6) What is OTR?

(B) Write any **three** out of six : **9**

- (1) Draw and enlist the part of ideal fermenter
- (2) Criteria of secondary screening
- (3) Explain distillation of alcohol
- (4) Properties of supporting matrix used for immobilization
- (5) Difference between SSC and DDC
- (6) Recovery of Gluconic acid

(C ) Write any **two** out of five : **10**

- (1) Define immobilization and explain the types and mechanism of immobilization in detail
- (2) Enlist and explain methods of chromatography
- (3) Explain rDNA technology with applications
- (4) Describe in detail media optimization
- (5) Explain the process of sterilization for Bacth Culture technique

- 3 (A) Write any **three** out of six : 6
- (1) Define inoculum
  - (2) What is cryopreservation ?
  - (3) What is sterilization cycle ?
  - (4) What is Monod's equation ?
  - (5) Explain the term upstream and downstream processing.
  - (6) What are the types of impeller?
- (B) Write any **three** out of six : 9
- (1) Write a note on Fermentation economics
  - (2) Draw and explain any Air-lift fermenter
  - (3) Explain filtration for media sterilization
  - (4) Write a note on solid state fermentation
  - (5) Give an overview of downstream processing
  - (6) What is fed batch culture technique
- (C) Write any **two** out of five : 10
- (1) Explain the fermentation process of penicillin
  - (2) Explain the process of formulation of media
  - (3) Explain the types of mutagenesis for strain improvement
  - (4) Write a detail note on aeration and agitation of fermenter
  - (5) Explain the fermentation process of citric acid.
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