



**BCF-003-1015033**

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

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

**August – 2021**

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

**Faculty Code : 003**

**Subject Code : 1015033**

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

[Total Marks : 70

**Instructions:**

**(1) Objective types of questions are compulsory**

**(2) Write any 5 questions out of 10 questions**

**1 [A] Answer the following (One mark) [04]**

1. \_\_\_\_\_ is an enzyme use in leather industry.
2. Give two examples of enzyme improved by rDNA technology.
3. Why cryoprotective agent must be added during cryopreservation?
4. Define metabolism.

**[B] Answer the following (2 mark) [02]**

1. What is Auxanography?

**[C] Answer the following (3 mark) [03]**

1. Explain isolation of mutant.

**[D] Answer the following (5 mark) [05]**

1. Explain range of fermentation.

**2 [A] Answer the following (One mark) [04]**

1. \_\_\_\_\_ is an example of cryoprotective agents.
2. Which indicators dye used in primary screening?
3. \_\_\_\_\_ is an example of physical mutagens
4. \_\_\_\_\_ strain is known as backers yeast.

**[B] Answer the following (2 mark) [02]**

1. Define mutagens with examples.

**[C] Answer the following (3 mark) [03]**

1. Write a note on application of rDNA technique in strain construction.

**[D] Answer the following (5 mark) [05]**

1. Describe methods for preservation and storage of cultures.

**3 [A] Answer the following (One mark) [04]**

1. Aeration device is known as \_\_\_\_\_.
2. Plug flow reactor is an example of continuous fermentation. TRUE/FALSE.
3. Which device protect the vortex formation in fermentation?
4. In \_\_\_\_\_ process substrate is added in increment as the process progress.

**[B] Answer the following (2 mark) [02]**

1. Draw well labelled diagram of fermenter.

**[C] Answer the following (3 mark) [03]**

1. Explain steps of starter culture.

**[D] Answer the following (5 mark) [05]**

1. Briefly describe types of fermenter.

**4 [A] Answer the following (One mark) [04]**

1. Agitation device is known as \_\_\_\_\_.
2. \_\_\_\_\_ phase will produce toxic metabolites
3. Beer brewing is occurs in \_\_\_\_\_ fermenter
4. \_\_\_\_\_ is known as aeration device

**[B] Answer the following (2 mark) [02]**

1. Define agitation and state its importance.

**[C] Answer the following (3 mark) [03]**

1. Write a note on heat control in fermentation industry.

**[D] Answer the following (5 mark) [05]**

1. Explain in detail growth kinetics.

**5 [A] Answer the following (One mark) [04]**

1. \_\_\_\_\_ molasses contain biotin.
2. Soft wood are higher in hexose. TRUE/FALSE.
3. The aeration rate of normal operated fermenter is \_\_\_\_\_.
4. Enlist distinct area of computer function in automation.

**[B] Answer the following (2 mark) [02]**

1. Which methods are used to sterilize fermenter?

**[C] Answer the following (3 mark) [03]**

1. Explain types of fermentation media.

**[D] Answer the following (5 mark) [05]**

1. Write a note on formulation of media.

- 6 [A] Answer the following (One mark) [04]**
1. \_\_\_\_\_ is an example of inhibitors
  2. Precursor can increase the growth yield. True/False
  3. Sulphite waste liquor can be used as carbon source. T/F.
  4. \_\_\_\_\_ temperature is required to sterilize fermenter
- [B] Answer the following (2 mark) [02]**
1. Define Antifoam agent with their example.
- [C] Answer the following (3 mark) [03]**
1. Explain sterilization of air.
- [D] Answer the following (5 mark) [05]**
1. Describe Automation process.
- 7[A] Answer the following (One mark) [04]**
1. Give full form of GLP.
  2. By which method pyrogens can be removed from media?
  3. Cross flow filtration increase the tendency of clogging. TRUE/FALSE.
  4. What is the main function of filter aids?
- [B] Answer the following (2 mark) [02]**
1. Enlist chemical and physical methods of cell disruption.
- [C] Answer the following (3 mark) [03]**
1. Explain Membrane filtration and dialysis for purification of fermented product.
- [D] Answer the following (5 mark) [05]**
1. Describe methods of chromatography for purification of product.
- 8 [A] Answer the following (One mark) [04]**
1. Give full form of RCF
  2. \_\_\_\_\_ is an examples of biological methods for cell disruption
  3. Cross flow filtration decrease the tendency of clogging. TRUE/FALSE.
  4. \_\_\_\_\_ method can be used to remove virus for recovery of product.
- [B] Answer the following (2 mark) [02]**
1. What is distillation?
- [C] Answer the following (3 mark) [03]**
1. Define bioassay and explain biological bioassay.
- [D] Answer the following (5 mark) [05]**
1. Briefly explain fermentation economics.
- 9 [A] Answer the following (One mark) [04]**
1. Full form of PBP.
  2. Give the name of antifoam agent used in vitamin B12 production.
  3. Citric acid can be produced at industrial level by \_\_\_\_\_ and \_\_\_\_\_ method.
  4. Marketed name of citric acid is \_\_\_\_\_.

- [B] Answer the following (2 mark) [02]**  
1. What is encapsulation?
- [C] Answer the following (3 mark) [03]**  
1. Write a short note on alcohol fermentation.
- [D] Answer the following (5 mark) [05]**  
1. Describe immobilization technique.
- 10 [A] Answer the following (One mark) [04]**  
1. Full form of SSF  
2. Give the name of sytnthetic penicilin  
3. \_\_\_\_\_ yeast can be used as backers yeast.  
4. Example of supporting matrix for immobilization.
- [B] Answer the following (2 mark) [02]**  
1. Enlist steps of bread preparation.
- [C] Answer the following (3 mark) [03]**  
1. Overview of SSF.
- [D] Answer the following (5 mark) [05]**  
1. Explain fermentative production of penicillin.
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