



**S-035019**

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

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

**November / December - 2020**

**BSCC505C : Bioprocess Technology**

Time : 2 Hours]

[Total Marks : 50

- Instructions :** (1) Answer only **three (3)** questions.  
(2) The examination will be for **two (02)** hours.  
(3) Q. No. **9** is **compulsory** and carries **14** marks.  
(4) Answer any **two** questions from questions  
No. 1 to 8. Each question carries **18** marks.

- 1 Write on the following :
  - (a) What are the characteristics of an industrially ideal organism ?
  - (b) Discuss the biotransformation and recombinant product as a range of fermentation products.
- 2 Write on the following :
  - (a) Explain the sources of industrially important microbes.
  - (b) Explain secondary screening briefly.
- 3 Write on the following :
  - (a) Explain in details : General principles for development of seed culture.
  - (b) Why is sterilization important in fermentation ? Explain use of high-pressure steam : Principle in detail.
- 4 Write on the following :
  - (a) Explain in detail : Minerals, Growth factors for fermentation media.
  - (b) Explain role of inhibitors agents in fermentation media.
- 5 Write on the following :
  - (a) Explain different types of Bioreactor.
  - (b) Explain essential features of a bioreactor (basic functions).

- 6 Write on the following :
  - (a) Explain process of centrifugation, solvent extraction in detail.
  - (b) Explain Tower fermentors and Biocatalytic Reactors.
  
- 7 Write on the following :
  - (a) Explain submerged culture (batch, fed-batch and continuous) fermentation.
  - (b) What is KLa Value ? Explain in details.
  
- 8 Write on the following :
  - (a) How temperature can be controlled in fermenter ?
  - (b) Write note on "Enzyme immobilization".
  
- 9 Write on the following :
  - (a) Name the dye used in detection of organic acid producers.
  - (b) Give two examples of amino acids producing microorganisms.
  - (c) What is fermentation ?
  - (d) Define biotransformation.
  - (e) Give various types of filters used for sterilization of fermentation media.
  - (f) Give the name of various types of carbohydrate used as a carbon source in fermentation media.
  - (g) Explain the role of Growth Factors.
  - (h) Give the difference between Bioreactor and Fermenter.
  - (i) What is Spray drying ?
  - (j) Name two antifoam agents. *alcohol /*
  - (k) List two characteristics of an ideal strain.
  - (l) Enlist Raw materials used in SSF.
  - (m) What is SSF ?
  - (n) Write KLa Value formula.