

## B.Sc. Semester-5 Examination

CC 304

Microbiology

March-2024

[Max. Marks : 70]

Time : 2-30 Hours]

**Instructions:**

1. *All questions are compulsory.*
2. *Figures on the right indicates marks.*
3. *Mention correct question number against the answer.*
4. *Draw figures wherever necessary.*

**Q.1** Explain all stages of chronological development in industrial microbiology. (14)

**OR**

**Q.1** (A) Discuss the range of fermentation process those that produce Microbial metabolites and recombinant products. (07)

(B) Describe the component parts of fermentation process. (07)

**Q.2** Explain the different methods for the Preservation of bacterial Cultures. (14)

**OR**

**Q.2** (A) Write a short note on "Primary screening of organic acid and amino acid producers". (07)

(B) Discuss the use of recombinant DNA techniques as strain improvement Strategy. (07)

**Q.3** Describe the sterilization of media by batch and continuous sterilization process. (14)

**OR**

**Q.3** (A) Explain the general principles for development of seed culture for bacteria. (07)

(B) Describe the principles of media formulation. (07)

**Q.4** Explain different types of impellers and spargers used in Stirred tank bioreactor. (14)

**OR**

**Q.4** (A) Discuss essential features of a basic bioreactor. (07)

(B) Write a short note on "Tower fermenter". (07)

**Q.5** Give short and specific answers in 1-2 lines only (any seven). (14)

- 1 Define trophophase.
- 2 What are secondary metabolites? give one example.
- 3 Define transformation process.
- 4 What is secondary screening?
- 5 Define quality control.
- 6 Give any 2 characteristics of an industrially ideal organism.
- 7 Define inducers. How inducers are used in media formulation?
- 8 Give any two advantages of batch sterilization over continuous sterilization.
- 9 Define del Factor and write its final equation.
- 10 Give specific use of Bio-catalyst reactors.
- 11 Name any one Device used for monitoring pH and temperature.
- 12 Define containment.