

B.Sc. Semester - 6 (CBCS) Examination
April/May-2022 (NEW COURSE)
Bioprocess Technology (Core (New))

Time: 2:30 Hours**Marks: 70****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

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- Q.1 A Give the specific Answers [04]**
- a) Give any two-test system used for screening of metabolite.
 - b) Differentiate between Master strain and Working strain.
 - c) What are microbial metabolites?
 - d) Define: Enrichment
- Q.1 B Answer in Brief (any one out of two) [03]**
- a) Give detail note on Primary and Secondary screening techniques.
 - b) Explain: Recombinant DNA technology for strain development.
- Q.1 C Write a Note on (any one out of two) [07]**
- a) Component parts fermentation process.
 - b) Protoplast fusion.
- Q.2 A Give the specific Answers [04]**
- a) Enlist the nitrogen source used for media formulation.
 - b) Define media. Mention its types.
 - c) What are Antifoam agents?
 - d) Define inducers.
- Q.2 B Answer in Brief (any one out of two) [03]**
- a) Discuss in detail on carbon sources required for microbial fermentation.
 - b) Give a note on media optimization.
- Q.2 C Write a Note on (any one out of two) [07]**
- a) Medium formulation
 - b) Inoculum Vs Production medium
- Q.3 A Give the specific Answers [04]**
- a) What is Del factor.
 - b) Enlist four different types of fermenters used for large volume production.
 - c) Define Baffles. Give its application in fermentor.
 - d) Enlist any four different types of valves used for control of flow of liquid.
- Q.3 B Answer in Brief (any one out of two) [03]**
- a) Discuss in detail about various different types of agitators used to achieve mixing in fermentor.
 - b) Sparger is the device use for introducing air into liquid in fermenter: Justify.
- Q.3 C Write a Note on (any one out of two) [07]**
- a) Medium sterilization.
 - b) Types of bioreactors.
- Q.4 A Give the specific Answers [04]**
- a) Define distillation. What type of the product can be purified by the distillation process?
 - b) Give the equation of centrifugal sedimentation rate.
 - c) Enlist physical methods used for cell disruption.
 - d) Define: Broth conditioning.

- Q.4 B Answer in Brief (any one out of two)** [03]
- a) Give a detail note on filtration techniques for cell harvesting process.
 - b) Explain various chemical methods used for cell disruption.
- Q.4 C Write a Note on (any one out of two)** [07]
- a) Two Phase aqueous extraction.
 - b) Solvent recovery.
- Q.5 A Give the specific Answers** [04]
- a) What is enzyme?
 - b) Write a mode of action of Streptomycin antibiotic.
 - c) Define Immobilization.
 - d) Name the microorganism used to produce ethyl alcohol.
- Q.5 B Answer in Brief (any one out of two)** [03]
- a) Give a detail note on proteolytic enzyme.
 - b) Write a note on citric acid production.
- Q.5 C Write a Note on (any one out of two)** [07]
- a) Penicillin production.
 - b) Production of amino acids.
