

B.Sc. Semester - 5 (CBCS) Examination**December - 2020 (Old Course)****BIOPROCESS AND BIOCHEMICAL ENGINEERING(CORE)****Time: 1:30 Hours****Marks: 42****Instructions:**

1. Figures to the right indicate marks.
2. There are five questions in the question paper.
3. Answer any three of the following questions.

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- Q.1(A) Answer the following question. (any one out of two) (07)
1. What is Strain improvement? Explain the
 2. Define screening. Enlist and explain the criteria of secondary screening.
- Q.1(B) Attempt any one. (out of two) (04)
1. Write the applications of recombinant DNA technology.
 2. Explain lyophilization and cryopreservation techniques of preservation.
- Q.1(C) Attempt any three. (out of five) (03)
1. Antibiotic is an example of _____ metabolites.
 2. Purine replaced by pyrimidine, the process is called.
 3. Mutation that occurs under natural condition are called.
 4. Replica plating technique is used for the isolation of _____.
 5. Primary metabolites are produced in _____ phase of growth.
- Q.2(A) Answer the following question. (any one out of two) (07)
1. What is Fermentor? Draw and explain different types of fermentor.
 2. Explain the methods of KLa calculations for checking the efficiency of aeration and agitation of fermentor.
- Q.2(B) Attempt any one. (out of two) (04)
1. Explain the process of oxygen transfer rate.
 2. Explain the kinetics of growth in batch culture technique.
- Q.2(C) Attempt any three. (out of five) (03)
1. Rheology is the study of
 2. _____ is the phase of microbial growth where death rate is equal to growth rate
 3. Chemostat is an example of _____ culture technique
 4. _____ is Baker's yeast
 5. Tower fermentor is generally used for the production of
- Q.3(A) Answer the following question. (any one out of two) (07)
1. Enlist and explain the raw material used in media.
 2. Explain the process of steam sterilization for media.
- Q.3(B) Attempt any one. (out of two) (04)
1. Write a note on Automation.
 2. What is media optimization? Explain any one method of media optimization in detail.

- Q.3(C) Attempt any three. (out of five) (03)
1. Corn steep liquor is used as _____ in penicillin production.
 2. Heat labile compounds can be sterilized by _____
 3. Molasses is used as a _____ source
 4. Inoculum media aims to _____ the growth of bacteria
 5. Distiller's soluble is a byproduct of _____ fermentation.
- Q.4(A) Answer the following question. (any one out of two) (07)
1. Define Bioassay. Explain five different methods of bioassay.
 2. Explain different types of centrifugation and filtration techniques used for cell separation.
- Q.4(B) Attempt any one. (out of two) (04)
1. Give an overview of downstream processing.
 2. Explain mechanical and non mechanical method of cell destruction.
- Q.4(C) Attempt any three. (out of five) (03)
1. Ultrasonicator is used for the _____ of cell.
 2. Expand HPLC
 3. Alcohol can be recovered by _____
 4. Ammonium sulphate is used for the recovery and fractionation of _____
 5. Agar diffusion is type of _____ method
- Q.5(A) Answer the following question. (any one out of two) (07)
1. Explain fermentation process of citric acid.
 2. Methods of enzyme immobilization.
- Q.5(B) Attempt any one. (out of two) (04)
1. Give an overview of solid state fermentation.
 2. Recovery and uses of gluconic acid.
- Q.5 (C) Attempt any three. (Out of five) (03)
1. Glutraldehyde is used as _____ reagent in immobilization
 2. _____ strain is used for the production of Gluconic acid
 3. Vitamin B12 can be produced by _____ strain
 4. Pheny acetic acid is used as precursor for the production of _____
 5. Sauerkraut is produced by _____
