

BSCbioCC6010
B.Sc. Semester - 6 (CBCS) Examination
March/April -2020
BIOPROCESS TECHNOLOGY (CORE)

Seat No : _____

Time: 2:30 Hours

Marks: 70

Instructions:

1. All questions are compulsory.
 2. Figures to the right indicate marks.
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Q-1A : Answer the following (Any one) (07)

1. Discuss in detail on application of recombinant DNA technology for improvement of industrially important microbes.
2. Define screening. Explain with example methods of Primary & Secondary Screening.

Q-1 B: Answer the following (Any one) (04)

1. Explain: Isolation methods using selection of desired characters.
2. Short Note: Component parts fermentation process.

Q-1 C: Answer the following (Any three) (03)

1. What are secondary metabolites? Give its example.
2. Enlist the five major groups of commercially important fermentations.
3. What is protoplast fusion?
4. Define vector. Give its application in strain improvement.
5. What is fermentation?

Q-2 A : Answer the following (Any one) (07)

1. Enlist the criteria which should meet to source of raw materials and explain various Carbon sources used for media preparation.
2. Discuss in detail on medium optimization.

Q-2 B: Answer the following (Any one) (04)

1. Media formulation.
2. Inoculum vs Production medium.

Q-2 C: Answer the following (Any three) (03)

1. Define cellular yield coefficient(Y).
2. What is the importance of oil in fermentation process? Give two name of oil which is used in fermentation process.
3. Enlist the factors influencing the choice of nitrogen source for media preparation.
4. Write the ideal characteristics of production media.
5. Define media and give its types.

Q-3 A : Answer the following (Any one) (07)

1. Explain batch and continuous fermentation and give their comparative advantages and disadvantages.
2. Give detail on various types of bioreactors.

Q-3 B: Answer the following (Any one) (04)

1. Criteria for design of a fermentor.
2. Explain in short: Sterilization of air and feed

- Q-3 C: Answer the following (Any three) (03)**
1. What is K_{La} ? give the importance of it in fermentor.
 2. Define Bioreactor.
 3. What is Del factor in sterilization?
 4. What is fluid rheology?
 5. Enlist the basic functions of fermentor.
- Q-4 A : Answer the following (Any one) (07)**
1. Explain the filtration process for cell separation during product recovery.
 2. Elaborate on techniques used for cell disruption.
- Q-4 B: Answer in short (Any one) (04)**
1. Liquid liquid extraction.
 2. Chemical Vs Biological assay of fermentation products.
- Q-4 C: Answer the following (Any three) (03)**
1. Define broth conditioning.
 2. Give various names of agents used to precipitate the product during recovery process.
 3. Explain solvent recovery.
 4. Differentiate between upstream and downstream process.
 5. Define sedimentation.
- Q-5 A : Answer the following (Any one) (07)**
1. Discuss on methods of Immobilization in used fermentation process.
 2. Define antibiotics. Explain in detail on Penicillin Production.
- Q-5 B: Answer the following (Any one) (04)**
1. Proteases production.
 2. Production of Riboflavin vitamin.
- Q-5 C: Answer the following (Any three) (03)**
1. Define antibiotic. Name the microorganisms that produce Streptomycin.
 2. What is enzyme? Give the two different applications of amylase enzyme.
 3. Which source organism used in submerged culture process of citric acid production?
 4. Explain the recovery step of ethyl alcohol after fermentation.
 5. Which organism produces Lysine? Give importance of Lysine.
