



GAD-2304

Seat No. _____

B. Sc. (Sem. V) Examination

November / December – 2013

Biotechnology : Paper - CC - I - VII - 501

(Paper - 7 :Bioprocess & Biochemical Engineering)

Time : 3 Hours]

[Total Marks : 70

1 Answer the following : (any fourteen) 14

- (i) Define primary screening.
- (ii) Give the name of two chemical mutagenic agents.
- (iii) Give the full form of DNA.
- (iv) Which temperature is used in the culture preservation by Liquid Nitrogen method ?
- (v) Define Fermenter or Bioreactor.
- (vi) Define Growth.
- (vii) What is Chemostat ?
- (viii) Name any one bacterial strain used as a starter culture.
- (ix) Name any chemical agent used as an antifoaming agent.
- (x) Molasses is the source of which content in a medium ?
- (xi) Define Media.
- (xii) Which instrument is used in the sterilization of air ?
- (xiii) What is the meaning of downstream processing in a fermentation ?
- (xiv) Which microbial strain is used for the fermentative production of ethanol ?
- (xv) Define Antibiotic.
- (xvi) Who first discovered the antibiotic Penicillin ?

- 2 Answer the following : (any **eight**) 16
- (i) What is Spontaneous mutation ?
 - (ii) Name the methods of strain improvement.
 - (iii) What is the function of an agitator in a fermenter ?
 - (iv) Explain Turbidostat.
 - (v) What are the advantages of continuous culture technique ?
 - (vi) How will you prepare a starter culture ?
 - (vii) Name few nitrogen sources commonly used in fermentation media.
 - (viii) What is Media optimization ?
 - (ix) Which precursor metabolites are used in Penicillin fermentation ?
 - (x) Give the composition of media used in ethanol fermentation.
- 3 Answer the following : (any **four**) 20
- (i) Explain techniques of microbial culture preservation.
 - (ii) Discuss design of an ideal fermenter.
 - (iii) Discuss ideal characteristics of a starter culture.
 - (iv) Write a note on Batch culture process.
 - (v) Discuss carbon sources used in fermentation media.
 - (vi) Discuss fermentation economics.
- 4 Answer the following : (any **two**) 20
- (i) Application of recombinant DNA technique in strain improvement.
 - (ii) Write a note on Aeration and Agitation facilities of fermenters.
 - (iii) Discuss types of fermentation media with suitable examples.
 - (iv) Give an overview on downstream processing.