



KT-5290

Seat No. _____

B. Sc. (Sem. V) Examination

November / December - 2014

Biotechnology : Elective Course (EC) 3
(Industrial Biotechnology)

Time : 2 Hours]

[Total Marks : 50

1 Answer the following :

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- (1) What is agar?
 - (a) A nutrient
 - (b) Vitamins
 - (c) A solidifying agent
 - (d) Broth
- (2) Industrial microorganisms mainly depends on the phenomenon
 - (a) Pasteurization
 - (b) Fermentation
 - (c) Vaccination
 - (d) Both (b) and (c)
- (3) Basic principle in industrial microbiology is
 - (a) Suitable growth conditions
 - (b) Fermentation
 - (c) Providing aseptic conditions
 - (d) All of these
- (4) Who coined the term antibiotic?
 - (a) Alexander Fleming.
 - (b) S. Waksman.
 - (c) Louis Pasteur.
 - (d) Edward Jenner.

- (5) Antibiotics tend to be _____ metabolites.
- (a) Primary.
 - (b) Secondary.
 - (c) Tertiary.
 - (d) Quaternary.
- (6) For streptomycin production the microorganisms required are
- (a) *Streptomyces griseus*
 - (b) *Streptomyces niger*
 - (c) *Saccharomyces cereviceae*
 - (d) All of these
- (7) *Aspergillus niger* is used generally for the production of
- (a) Ethanol
 - (b) Penicillin
 - (c) Citric acid
 - (d) Lactic acid
- (8) For amylase production the microorganism required is
- (a) *B. subtilis*
 - (b) *S. cereviceae*
 - (c) *A. nigar*
 - (d) None of these
- (9) L. lysine is produced from
- (a) *Corynebacterium glutamicum*
 - (b) *Corynebacterium sp*
 - (c) *Mycobacterium sp.*
 - (d) None of these
- (10) Submerged fermentations are
- (a) Batch fermentation
 - (b) Continuous fermentation
 - (c) Both (a) and (b)
 - (d) None of these

2 Short answer : (any **five**)

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- (1) Which process of downstream recovery is preferably used for extraction of streptomycin from filtrate ?
- (2) Write the name of bacteria commercially used for the production of L-Lysine.
- (3) Which metal ion is required to be absent for good Citric acid fermentation yields ?
- (4) Write the names of the techniques used for the purification of protease and amylase.
- (5) Write the name of organism commercially used for the production of protease.
- (6) Write the name of the technique used for the purification of Vitamin B₁₂.
- (7) Name the Precursor added in Vitamin B₁₂ fermentation.

3 Answer any **three** :

30

- (1) Write a note on Fermentative production of Amylase.
 - (2) Write a note on Fermentative production of Citric acid.
 - (3) Explain the recovery of streptomycin.
 - (4) Describe the various techniques for SCP production.
 - (5) Write a note on L-lysine fermentation.
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