

Sardar Patel University
External Theory Examination
Biotechnology: Industrial Microbiology (PS06CIGB03)

Friday, 21st October 2016

10:00 am to 1:00 pm

M.Sc. (Integrated) - SEM - VI

Total Marks: 70

Note:

- 1) Attempt all the questions (including multiple choice questions) which are to be written in the provided answer book only.
- 2) Draw neat and labeled diagram wherever necessary.

Q.I **Multiple choice questions:** (08)

- 1 To isolate the growth factor producing microorganisms we can use _____.
 (a) Crowded plate technique (c) Auxanography
 (b) Enrichment culture technique (d) Use an indicator dye
- 2 Most satisfactory method of long term preservation of microorganisms is _____.
 (a) Nitrogen sources (c) Mineral oil
 (b) Lyophilization (d) Serial subculturing
- 3 For the proper mixing of fermentation medium we can use _____.
 (a) Impeller (c) Sparger
 (b) Aerator (d) Baffles
- 4 Which of the following method is used for sterilization of media?
 (a) Heat (c) aeration
 (b) agitation (d) All of these
- 5 _____ Use for pressure measurement in fermentation media.
 (a) 'E' Bourdon (c) 'D' Bourdon
 (b) 'F' Bourdon (d) 'C' Bourdon
- 6 Thermistor are made from specific mixture of _____.
 (a) Pure oxides of Nickel (c) Both
 (b) Pure oxide of Iron (d) None
- 7 _____ use as an acidulent in food .
 (a) citric acid (c) Formic acid
 (b) sulfuric acid (d) None
- 8 In this process culture is inoculated across the surface of the production medium.
 (a) Submerged culture (c) serial subculture
 (b) Surface culture (d) None of these

Q.II Answer the following (Any seven) (14)

1. Write any four points of secondary screening.
2. Define mutant and mutation.
3. Write the advantages of preservation of microorganisms.
4. Enlist different types of thermometer use for temperature measurement.
5. Write the characteristics of industrially important microorganisms.
6. Write the use of sparger and baffles.
7. Define surface and submerged culture.
8. Define Chromatography and Precipitation.
9. Enlist applications of Amylase.

Q.III (a) Define fermentation. Explain Crowded plate technique in detail. (06)
(b) Write any two techniques for preservation of industrially important microorganisms. (06)

OR

(b) Write a note on strain improvement of industrially important microorganisms. (06)

Q.IV (a) Give a note on C sources used in fermentation medium. (06)
(b) Give a detailed account on Batch fermentation. (06)

OR

(b) Write a note on continuous fermentation. (06)

Q.V (a) Define agitation. Write about different types of Impeller in detail (06)
(b) Write a note on pressure measurement. (06)

OR

(b) What is KLa? Explain oxygen balance technique of KLa determination. (06)

Q.VI (a) Give a note on Citric acid production. (06)
(b) Define Precipitation, Co-current and Counter- Current. (06)

OR

(b) Write about Amylase production in detail. (06)

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