(28/A-8) SEAT No._____ No. of Printed Pages : 3

SARDAR PATEL UNIVERSITY
EXTERNAL EXAMINATION,(B.Sc.)
SEMESTER V
TIME: 10:00am to 1:00 pm
Subject/Course Code: USO5CMIC 06
Subject/Course Title: Fermentation Technology

Saturday, 3rd Nov, 2018 Total Marks: 70

Q.1 Multiple Choice Questions (10)

1. . _____ is an active ingredient in alcoholic beverages and also used in motor-car fuel.
a. polysaccharides b. lysine c. antibiotics d. ethanol

2. Interferon, insulin, human serum albumin etc are the product of _____ microorganisms.
a. Auxotrophic b. Autotrophic c. Wild type d. Genetically engineered

3. _____ metabolites are synthesized during idiophase.
a. Primary b. Secondary c. Both (a) and (b) d. None of above

4. The λ- max for DNA is _____nm.
a. 254 b. 120 c. 300 d. 400

5. PEG is used to induce recombination in _____
a. Protoplast fusion b. Sexual cycle c. Parasexual cycle d. None of the above

6. In Penicillin fermentation, Phenylacetic acid in the medium results in the production of _____.
a. Penicillin-G b. Penicillin-V c. Penicillin-N d. Penicillin-F

7. A fermenter, with internal or external riser, is an example of _____.
a. CSTR b. Air lift fermenter c. Fluidized bed reactor d. None of the above

8. Which of the following is a reactor for SSF?
a. CSTR b. Air-lift fermenter c. Tray fermenters d. None of the above

9. Which of the following is the most common method used for medium sterilization?
a. Use of steam. b. Use of filters c. Use of radiation d. None of the above.

10. When charged particles are attracted by opposite charges on surface of filtration medium, it is because of _____.
a. Electrostatic attraction b. Interception c. Diffusion d.Inertial impaction

(P.T.O)

Q.2 Attempt any ten. (20)

1. Define fermentation and enlist the range of fermentation processes, giving one example of each.
2. Write on the ideal characteristics of industrially important microorganisms.
3. What is upstream and downstream processing in fermentation. Explain briefly.
4. Explain the use of ionizing radiation in strain improvement.
5. Yeast extract can be used as a substrate as a source of nitrogen. Explain.
6. Enlist the ideal characteristics of a fermentation medium.
7. Write on problems envisaged in SSF?
8. Write on the control of foam during a fermentation process.
9. Draw a neat and labeled diagram of a typical fermenter with one multi bladed impellers.
10. Write on the advantages and disadvantages of continuous sterilization over batch sterilization.
11. Describe in brief on scale-up.
12. Describe with diagram a sampling port in fermentor.

Q.3 Define screening and describe secondary screening in detail. (10)

OR

Q.3 Write a detailed note on Primary screening of enzyme and antibiotic producers. (10)

Q.4. Write Short Notes on:

a. Mutagenesis through non ionizing radiation. (05)
b. Mutagenesis with base analogs. (05)

OR

Q.4. Write Short Notes on:

a. Isolation of auxotrophic mutants for primary metabolite. (05)
b. Isolation of auxotrophic mutants for secondary metabolite. (05)

Q.5 Write a short note on:

a. Ideal characteristics of a fermenter. (06)
b. Characteristics of SSF (04)

OR

Q.5 Write a short note on:

a. Continuous fermentation (06)
b. Air-lift fermenter. (04)

Q.6 Write short note on:

a. Sterilization of air (05)

b. Factors affecting Kla (05)

OR

Q.6 Write short note on:

a. Continuous sterilization of fermentation medium. (05)

b. Scaleup of fermentation process (05)

— X —

(3)