

[25]

SEAT No. _____

No. of Printed Pages : 02

SARDAR PATEL UNIVERSITY
B.Sc. EXAMINATION (2019)
US05 CMIC 06 (SEMESTER V)

FRIDAY

Date: ~~12-04-2019~~ 12/04/2019,
Time: 10-00 a.m. to 1-00 p.m

SUB: MICROBIOLOGY
Fermentation Technology

Total Marks: 70

- Q-1 Attempt all following multiple choice questions. (10)
- (1) Auxanography is a method for the detection of :
(a) Enzyme producer (b) Antibiotic producer (c) Growth factor producer. (d) None of these
 - (2) Secondary metabolites are produced during this phase.
(a) Idiophase. (b) Trophophase. (c) Log phase. (d) Decline phase.
 - (3) Organic acid producers can be detected by incorporation of:
(a) CaSO_4 (b) CaCO_3 (c) CuSO_4 (d) All of them.
 - (4) PEG is used to induce recombination in :
(a) Para sexual cycle. (b) Sexual cycle. (c) Transformation. (d) Protoplast fusion.
 - (5) Which of the following is an Acridine dye?
(a) Acridine orange. (b) Proflavine. (c) Acriflavin. (d) All of them.
 - (6) Following can be used as an inducer in Streptomycin production.
(a) Phenyl acetic acid. (b) Yeast Mannan. (c) Glycerol. (d) All of them.
 - (7) In fermentation process, open system is associated with :
(a) Continuous fermentation. (b) Batch fermentation. (c) Both a & b (d) none of them.
 - (8) During fermentation process, Oxygen electrodes measure :
(a) Temperature. (b) pH. (c) Dissolved oxygen. (d) All of these.
 - (9) Holding time in batch sterilization is :
(a) 10-30 min. (b) 20-60 min. (c) 20-40 min. (d) 30-45 min.
 - (10) Which organism is used to check the efficiency of sterilization?
(a) *Bacillus subtilis*. (b) *E. coli*. (c) *Bacillus stercorophilus*. (d) None of these
- Q-2 Attempt the following (any ten) (20)
- (1) Describe various criteria used for selection of industrially important organisms.
 - (2) Write a note on crowded plate method.
 - (3) Enlist the range of fermentation process.
 - (4) Explain the role of precursor in fermentation medium.
 - (5) Enlist various substrates used as nitrogen source in fermentation medium.
 - (6) Write in brief on various steps involved in gene technology.
 - (7) What problems are envisaged during SSF?
 - (8) Write a note on Fed batch fermentation.
 - (9) Draw a neatly labeled diagram of stirred tank reactor.
 - (10) Explain various criteria for ideal inoculum.
 - (11) Write a note on sampling.
 - (12) Describe in brief on scale up process.

①

(P.T.O.)

Q-3 Write in detail on significance of secondary screening. (10)

OR

Q-3 (A) Write a note on primary screening of organic acid producer. (05)

(B) Write a note on Auxanography. (05)

Q-4 Describe various raw materials that can be used as carbon source in fermentation medium. (10)

OR

Q-4 Write in detail on use of physical and chemical mutagens in strain improvement process. (10)

Q-5 Describe monitoring and control of temperature and foam during fermentation process. (10)

OR

Q-5 (A) Describe ideal characters of a typical fermenter. (05)

(B) Write a note on batch fermentation. (05)

Q-6 Write in detail on Scale down process. (10)

OR

Q-6 (A) Write a note on factors affecting mass transfer of oxygen. (06)

(B) Write a note on batch sterilization. (04)

— X —
②