

SUBJECT: FERMENTER DESIGN & MICROBIAL BIOTECHNOLOGY

Day : Tuesday
Date : 09/04/2019

S-2019-1219

Time : 03.00 PM TO 06.00 PM
Max. Marks: 60

N. B. :

- 1) All questions are **COMPULSORY**.
 - 2) Figures to the right indicate **FULL** marks.
 - 3) Draw neat and labeled diagram **WHEREVER** required.
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Q.1 Explain the different methods to maintain aseptic conditions in fermentation process? Add note on different sterilization methods used in batch and continuous process. **(15)**

OR

Describe the designing of fermentor that could be used for Animal cell culture and state its difference with classical fermentor.

Q.2 a) What is Airlift Fermentor and state the microbial product that could be fermented in it. **(10)**

b) Explain the different type of Fluid Rheology. **(05)**

Q.3 Attempt **ANY THREE** of the following: **(15)**

a) Describe the process of Antibiotic production.

b) State the importance of Valves and Steam Taps and their role in maintaining aseptic conditions.

c) Explain the biotransformation of steroid?

d) Describe different substrates and microorganisms used in production of SCP.

Q.4 Write short notes on **ANY THREE** of the following: **(15)**

a) Microbial production of Polysaccharides

b) Designing of Fermentor and its parts

c) Any two methods used for measuring K_La

d) Scale up of fermentation process

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