Question Paper

Exam Date & Time: 29-Mar-2021 (01:30 PM - 04:30 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

Manipal Academy of Higher Education, Manipal MPharm Theory End-Semester Examinations.

Bioprocess Engineering and Technology [PBT-MPB103T - S3]

Marks: 75 **Duration: 180 mins.**

SECTION - A

Answer all the questions.

Answer the following (10 marks x 5 = 50 marks)

1)	Compare the construction, working and applications of aerobic microbial fermenter with 'air-lift fermenter'.	(10)
2)	Discuss the parameters involved in inoculum development in an aerated bacterial fermentation system.	(10)
3)	What are the specific considerations for design of HVAC systems? Explain the design of aseptic room.	(10)
4)	Mention the sources of enzymes and the technical advantages for extracting microbial enzymes? Explain the production of a therapeutic enzyme citing example.	(10)
5)	What is an auxotrophic mutant? Explain the direct and indirect fermentative production of Lysine using such a mutant.	(10)

SECTION - B

Answer all the questions.

Answer the following (5 marks x 5 = 25 marks)

6)	Explain the construction and working of 'plate and frame filters'.	(5)
7)	Explain the concept of multistage chemostat.	(5)
8)	Schematically represent a typical rheogram and explain the Pseudoplastic behavior of fermentation fluids.	(5)
9)	What are allosteric enzymes? Explain the modification in Michaelis- Menten equation to describe the kinetic behavior of these enzymes.	(5)
10)	Explain the production and recovery of Alcohol	(5)

-----End-----