

Question Paper

Exam Date & Time: 27-Nov-2023 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

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

Bioprocess Engineering and Technology [PBT-MPB103T - S2]

Marks: 75

Duration: 180 mins.

SECTION - A

Answer all the questions.

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

- 1) Enlist and discuss the gassing out techniques for determination of OTR coefficient. (10)
- 2) State and derive Michaelis-Menten equation of an enzyme catalyzed reaction. Add a note on enzyme stability. (10)
- 3) Discuss the fermentative production and extraction of Streptokinase. (10)
- 4) With a neat, labelled diagram, describe the automation and operation of a continuous stirred tank reactor. (10)
- 5) Define filtration. Discuss the theories of filtration and specific applications. With a neat, labelled diagram explain the principle, operation and applications of the plate and frame type filter press. (10)

SECTION - B

Answer all the questions.

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

- 6) Explain Bingham body rheology of a typical fermentation. (5)
- 7) Write a note on microbial production of alkaloids. (5)
- 8) Explain the production of Industrial alcohol. (5)
- 9) Describe the growth kinetics of batch fermentation process. (5)
- 10) Mention the principle involved in centrifugation. How to convert RPM to RCF? Give any example of an industrial centrifuge used in bioprocess industry (5)

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