

Question Paper

Exam Date & Time: 29-Nov-2017 (02:00 PM - 05:00 PM)



MANIPAL UNIVERSITY

**MANIPAL COLLEGE OF PHARMACEUTICAL SCIENCES
END SEMESTER THEORY EXAMINATIONS - NOVEMBER 2017
PROGRAM: MPHARM SEMESTER 1
DATE: 29/11/2017
TIME: 2:00PM - 5:00PM**

Microbial and Cellular Biology [PBT-MPB102T]

Marks: 50

Duration: 180 mins.

Answer all the questions.

Answer the following (5 marks x 8 = 40 marks)

- 1) Classify bacteria based on the cell wall characteristics and elaborate on the chemical structure of any one type. (5)
- 2) Explain the lytic cycle of bacteriophage with suitable diagram. (5)
- 3) Explain the concept of lac operon. (5)
- 4) Write a note on base excision repair and nucleotide excision repair mechanisms. (5)
- 5) Give a brief outline on the different phases of normal mammalian cell cycle. (5)
- 6) Describe the cell cycle control system with emphasis on checkpoints. (5)
- 7) Compare the different types of cell cultures. (5)
- 8) Write a note on the modes and significance of adherence in bacterial colonization. (5)

Answer the following with specific answers (2 marks x 5 = 10 marks)

- 9) Sketch the normal bacterial growth curve and mention its phases. (2)
 - A) (2)
 - B) Briefly explain the three steps in the elongation phase of translation process. (2)
 - C) Enlist four differences between necrosis and apoptosis. (2)
 - D) Give an outline of disaggregation of animal tissue for cell culturing. (2)
 - E) What is HAART therapy? Mention any two inhibitors in this category. (2)

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paper

01-Dec-2017 (02:00 PM - 05:00 PM)



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MANIPAL COLLEGE OF PHARMACEUTICAL SCIENCES
END SEMESTER THEORY EXAMINATIONS - NOVEMBER 2017
PROGRAM : MPHARM SEMESTER I
DATE : 01-12-2017
TIME : 2:00PM - 5:00PM

Bioprocess Engineering and Technology [PBT-MPB103T]

Marks: 50

Duration: 180 mins.

a

Answer all the questions.

Answer the following (5 marks x 8 = 40 marks)

- 1) Give an account of Air lift fermenter. (5)
- 2) Define screening. Write briefly on isolation methods not utilizing selection of the desired characteristic. (5)
- 3) Compare batch culture with continuous culture as investigative tool. (5)
- 4) Enlist the methods of strain improvement. Compare natural variants with mutants for improving productivity (5)
- 5) Enlist the methods for determination of oxygen transfer rate. Explain any one method for testing air purity. (5)
- 6) Define the term 'immobilization'. Compare and contrast packed bed and fluidized bed enzyme reactors (5)
- 7) What are factors affecting extraction? Explain the working principle and application of a countercurrent extractor. (5)
- 8) Describe the production of citric acid. (5)

b

Answer the following with specific answers (2 marks x 5 = 10 marks)

- 9) What is a rheogram? (2)
 - A) (2)
 - B) Briefly explain the process of bioautography. (2)
 - C) Mention the steps involved in recovery of Penicillin. (2)
 - D) Differentiate impellers from baffles. (2)
 - E) Enlist any four properties of an ideal antifoam. (2)

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**MANIPAL COLLEGE OF PHARMACEUTICAL SCIENCES
END SEMESTER THEORY EXAMINATIONS - NOVEMBER 2017
PROGRAM : MPHARM SEMESTER I**

DATE : 04-12-2017

TIME : 2:00PM - 5:00PM

Advanced Pharmaceutical Biotechnology [PBT-MPB104T]

Duration: 180 mins.

Marks: 50

Answer all the questions.

Answer the following (5 marks x 8 = 40 marks)

- 1) Explain the advantages of enzymes from microbial source compared to that of animal and plant sources. (5)
- 2) Explain any two methods of transfection that are commonly used in recombinant DNA technology. (5)
- 3) With suitable examples explain the features of a prokaryotic and a eukaryotic expression vectors. (5)
- 4) Classify chromosomal abnormalities. Write in brief on any one. (5)
- 5) Write the applications of microarray technology. (5)
- 6) Explain the features of anchorage dependent and independent cell cultures. (5)
- 7) Compare the features of embryonic and adult stem cells. (5)
- 8) Discuss the theory of Polymerase Chain Reaction. (5)

Answer the following with specific answers (2 marks x 5 = 10 marks)

- 9) Enlist any four properties of enzymes. (2)
- A) Write about the role of enzyme stability during selection of source of enzyme. (2)
- B) Write the applications of recombinant erythropoietin and interferons. (2)
- C) Mention any four applications of flow cytometry. (2)
- D) What are xenobiotics? (2)
- E)

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