

Question Paper

Exam Date & Time: 13-May-2024 (02:00 PM - 05:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

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

PBT-MPB 201T Proteins and Protein Formulations

13 May 2024 2-5 PM 75 Marks

Proteins and Protein Formulations [PBT-MPB201T -S1]

Marks: 75

Duration: 180 mins.

SECTION - A

Answer all the questions.

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

- 1) Differentiate amino acid content and amino acid sequence analysis. Explain the Sanger and Edman degradation techniques. (10)
- 2) Discuss the four types of protein structure. (10)
- 3) Citing suitable examples, explain the protein precipitation using the salting-out method. Describe the principle involved in SDS-PAGE. (10)
- 4) Explain the key reasons that affect the protein stability during its formulation development. (10)
- 5) Represent the manufacturing of a target protein from defined cell culture as a flow chart. Explain the levels of similarity and enlist the steps in the assessment of biosimilars.(3+4+3) (10)

SECTION - B

Answer all the questions.

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

- 6) Explain the peptidomimetic methods used for enhancing the stability and therapeutic activity of natural peptides. (5)
- 7) Discuss the steps involved in the production of monoclonal antibodies. (5)
- 8) Write a note on nanoparticles as drug delivery systems for proteins and peptides. (5)
- 9) Discuss the pros and cons of various routes of administration of biotherapeutics. (5)
- 10) Write a note on 'volume of distribution' as a pharmacokinetic parameter and discuss how protein binding affects it. (5)

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