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B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

August 2024 Supplementary Examinations

Programme: B.E.

Branch: Biotechnology

Course Code: 19BT7DE5PBT

Course: Pharmaceutical Biotechnology

Semester: VII

Duration: 3 hrs.

Max Marks: 100

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

UNIT - I

1 Distinguish between the following, with illustrated examples wherever relevant:- **20**

- a) Biologic and biopharmaceutical
- b) Preclinical and Clinical trials
- c) IND and API

UNIT - II

2 a) Evaluate the relative merits and demerits of pulmonary versus enteric delivery systems, indicating examples of each. **10**

b) Distinguish different tablet manufacturing techniques. Highlight the importance of excipients **10**

UNIT - III

3 a) How does Phase I drug metabolism differ from Phase II drug metabolism? **10**

b) With an example, elucidate the PK/PD of a protein-based drug. **10**

OR

4 a) How does drug elimination following intravenous injection differ from elimination via oral route? **10**

b) With examples distinguish between bioequivalence & bioavailability. What is meant by clearance rate? **10**

UNIT - IV

5 a) With examples distinguish between side effects and adverse effects. **10**

b) How does acute toxicity differ from chronic toxicity? Illustrate. **10**

OR

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

6 a) Distinguish between mutagenesis & carcinogenicity with examples of each. **10**
How are they connected to teratogenicity? Illustrate.

b) Compare & contrast the role of animal models in drug and disease evaluation. **10**
What are the approaches to reduce the usage of animal models?

UNIT - V

7 a) Evaluate the efficacy of engineered insulins in comparison with natural **10**
insulin, using case examples

b) Distinguish between IGF, EGF & Neurotrophic factors highlighting recent **10**
developments in their production.

SUPPLEMENTARY EXAMS 2024