



Seventh Semester B.E. Degree Examination, Dec.2024/Jan.2025  
**Clinical and Pharmaceutical Biotechnology**

Time: 3 hrs.

Max. Marks: 100

**Note:** Answer any FIVE full questions, choosing ONE full question from each module.

**Module-1**

- 1 a. What is Drug design? Discuss the basic concepts and applications in drug designing. (10 Marks)  
b. What are the physiochemical considerations in manufacturing herbal medicines? Explain. (10 Marks)

**OR**

- 2 a. Explain in detail about concept and testing of preformulation and formulation development considerations. (10 Marks)  
b. What are the analytical methods and tests for used for various drugs? (10 Marks)

**Module-2**

- 3 a. Elaborate pharmacodynamics and pharmacokinetics of protein based drugs. (10 Marks)  
b. Explain the following :  
i) Disease Target identification ii) Enzyme inhibitors. (10 Marks)

**OR**

- 4 a. What are the need of pharmacokinetic study? Explain pharmacokinetics parameters. (10 Marks)  
b. Elaborate evolution of drug metabolism phase – I metabolism and metabolism phase – II. (10 Marks)

**Module-3**

- 5 a. Explain the classification of drugs based on therapeutic actions. (10 Marks)  
b. Write a note on :  
i) Contraceptives ii) Laxatives. (10 Marks)

**OR**

- 6 a. Explain Pharmacotherapy of migraine, cancer and diabetes. (10 Marks)  
b. Explain the following :  
i) Hormone replacement therapy ii) Herbal health products. (10 Marks)

**Module-4**

- 7 a. Explain in detail about clinical importance of therapeutic proteins and enzymes. (10 Marks)  
b. Elaborate the hormones and growth factors used as therapeutics. (10 Marks)

**OR**

- 8 a. What are Interferons? Explain preservation and clinical use of blood and blood components. (10 Marks)  
b. Discuss advanced drug delivery systems in detail. (10 Marks)

**Module-5**

- 9 a. Discuss Pre – clinical development to support testing in humans. (10 Marks)  
b. Explain the following :  
i) Relationship between animal and human pharmacology. (05 Marks)  
ii) Concepts of pharmacovigilance. (05 Marks)

**OR**

- 10 a. Explain the following :  
i) Clinical Trials – informed consent ii) Placebo responses. (10 Marks)  
b. Write a note on :  
i) Clinical Research Data Management. (05 Marks)  
ii) Clinical Research from Pharmaceutical Industry. (05 Marks)

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