



1. Discuss in detail about Quality by Design (QBD) in Pharmaceutical development.
2. What is a computer simulation? Explain its role in whole organism, isolated tissues, organ and genes.
3. Explain the role of computers in the development of microemulsions.
4. What do you mean by Drug disposition? Enlist the transporters used in the drug disposition and explain any two of them in detail.

**SHORT ESSAY (Answer any Nine)**

**9 X 5 = 45 Marks**

5. What do you mean by Artificial Intelligence? Write its advantages and disadvantages.
6. Differentiate between Descriptive versus Mechanistic modelling.
7. Write the significance of In Vitro-In Vivo Correlation in biopharmaceutical characterization.
8. Write the current challenges and applications of Robotics in the field of Pharmaceutics.
9. Write the important characteristics of Fed versus Fasted state.
10. What do you mean by optimization? Write a note on Factorial design.
11. Discuss the ethics of computing in pharmaceutical Research.
12. Write a note on parameter sensitivity analysis.
13. Explain the importance of solubility and intestinal permeation in modelling.
14. What are Confidence regions? Write its significance.

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