Draw neat, labeled diagrams wherever necessary.

NG ESSAY (Answer any Three) **3 X 10 = 30 Marks**

1. Explain one compartmental open model with extra vascular route of administration along with various pharmacokinetic parameters.
2. Explain the various mechanisms of drug absorption.
3. Describe the *in vitro* drug dissolution testing models. Explain their merits and limitations.
4. Explain the causes of non linearity in pharmacokinetics of drugs. Add a note on estimation of Vmax and Km.

SHORT ESSAY (Answer any Nine) **9 X 5 = 45 Marks**

5. Explain pH partition hypothesis and its limitations.
6. Explain the protocol for bioequivalence studies.
7. Discuss Pharmacokinetic drug interactions.
8. Write the objectives of bioavailability studies. Enlist the methods for measurement of bioavailability. Explain method using plasma concentration data.
9. Define and classify compartment models. Discuss briefly the significance and limitation of compartment modeling.
10. Write the applications of Pharmacokinetic in novel drug delivery systems.
11. Explain the influence of gastric emptying and intestinal transit time on absorption of drugs.
12. Explain *in -vivo* methods for determining absorption of drugs.
13. Discuss Pharmacokinetics and Pharmacodynamics of biotechnology drugs.
14. Explain biological as factors affecting drug absorption.

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