

**Duration: 03 hrs**

**Marks: 80**

- N.B:** 1) Q1 is compulsory  
2) Answer any three out of remaining five questions  
3) Draw neat and labeled diagram wherever necessary,

- Q. 1. A) Define 10M**  
i) Drug ii) Bioavailability iii) Therapeutic index iv) Pharmacokinetics  
v) Control release drug delivery
- B) Give Detail account on Naming and classification of Drug. 10M**
- Q.2. a) Write short notes on different modes of drug administration. 10M**  
b) Explain in detail different phases of clinical trials. 10M
- Q.3. a) Discuss Liposome mediated drug delivery system. 10M**  
b) Explain the role of protein kinases in cancer treatment along with different anticancer drugs. 10M
- Q. 4. a) What is mean by biopharmaceuticals? Explain in detail production of insulin, 10M**  
b) What is the basis for discovering drug targets? How to optimize target interaction in drug design? 10M
- Q.5. a) Explain process involved in regulatory affairs for drug approval. 10M**  
b) What is patent? Explain different ways for application of patents. 10M
- Q.6. a) Explain different phases involved in drug metabolism with special emphasis on cytochrome p450. 10M**  
b) What is the significance of placental barrier and blood brain barrier during drug distribution? 10M