

**ANSWER ANY FOUR****4 X 25 = 100 Marks**

1. a) What is serendipity? Explain with suitable examples **(10+15=25 marks)**  
b) On what basis prodrugs are designed? Explain with the help of appropriate examples
2. a) How do natural products act as leads for new drug discovery **(8+8+9=25 marks)**  
b) Discuss the different carbohydrate based drugs, giving their uses  
c) Give different classes of oral hypoglycemic agents giving two examples for each class
3. a) Explain the emergence of new antihypertensive agents with improved safety profiles.  
How are ACE inhibitors designed? **(11+14=25 marks)**  
b) Write a note on:
  - Prostaglandins involved in GI tract related problems
  - Somatostatin
4. a) Describe SAR of cardenolides as positive inotropic agents. Comment on the non-steroidal molecules with cardiotonic activity **(11+14=25 marks)**  
b) Explain briefly:
  - Resistance to antifungal drugs
  - Metal ions as drug targets
5. a) Explain the chemistry of penicillins giving different modifications leading to variation / improvement in activity profile **(11+14=25 marks)**  
b) Write short notes on:
  - Platinum-based drugs
  - Clavulanic acid and analogues
6. Write short notes on: **(5 x 5 =25 marks)**
  - a) Acyclovir
  - b) Actinomycins
  - c) Mitotic inhibitors
  - d) DNA-topoisomerase
  - e) Colchicine

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