

1. Discuss how new anticancer agents can be developed from natural products as a lead.
2. What do you understand by Gene therapy? Explain in detail and discuss its clinical applications and recent advances.
3. Discuss the stereochemistry and nomenclature of steroids and elucidate the structure of Testosterone.
4. Elucidate the structure of Reserpine and confirm by its synthesis.

**SHORT ESSAY (Answer any Nine)**

**9X 5 = 45 Marks**

5. Explain stereochemistry and nomenclature of alkaloids.
6. Write note macrolide antibiotics.
7. Elucidate the structure of cortisone.
8. Discuss principle and method of RNA and DNA estimation.
9. Give the structure and uses of the active constituents (at least 3) from a) *Salacia reticulata* b) *Phyllanthus niruri* c) *Swertia chirata* d) *Curmuma longa*
10. How do  $^1\text{H}$ NMR,  $^{13}\text{C}$ NMR, IR and MS spectroscopy help in the characterization of Flavanoids?
11. Write a note on Hybridoma technology.
12. Discuss the isolation, biological activity and stereochemistry of Ephedrine.
13. Write a note on newly developed cardiovascular drugs from natural origin.
14. How would you differentiate the structure of steroids and alkaloids on the basis of IR.?

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