



Your answers should be specific to the questions asked.  
Draw neat labeled diagrams wherever necessary. Answer all questions

**LONG ESSAY (Answer any TWO)**

**2 X 20 = 40 Marks**

1. Design the commercial production of Phenobarbitone with respect to
  - a) reaction sequences and flow diagram
  - b) material of construction of equipments
  - c) purification procedure
  - d) probable effluents and its management
2.
  - a) What are possible industrial hazards? How can they controlled?
  - b) Write a note on plant location
3.
  - a) Explain merits and demerits of multipurpose plant vs dedicated plant for bulk drugs with specific examples
  - b) What are various parameters considered for estimation of growth forecast of bulk drug?. Illustrate your answer with examples

**SHORT ESSAY (Answer any FIVE)**

**5 X 10 = 50 Marks**

4. Explain the Govt policies and regulatory authorities involved in controlling bulk drug production
5. Discuss layout and construction commercial aspects of bulk drug production
6. Write the concept methodology, applications and limitation of combinatorial synthesis of drug production
7. Write the flow diagram and reaction sequence for industrial production of clotrimazole
8. Explain commercial production and flow diagram of mebendazole
9. Enumerate historical development of bulk drug industry in India

**SHORT NOTES**

**2 X 5 = 10 Marks**

10. Enumerate effects of multinational companies on bulk drug production of India
11. Write notes on
  - a) Private enterprises
  - b) foreign collaboration

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