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- Notes : 1. Illustrate your answers wherever necessary with the help of neat sketches.  
2. All questions are compulsory.

- 1. Solve any ten. 20**
- i) Stability testing protocols.
  - ii) Types of validation.
  - iii) Inventory management and sales forecasting.
  - iv) Students 't'-test and its significance.
  - v) Factors influencing solubility.
  - vi) Optimization techniques in pharmaceutical processing.
  - vii) Concept and parameters of optimization.
  - viii) Methods used for enhancement of solubility of poorly water soluble drugs.
  - ix) Total quality management.
  - x) What are the key elements of validation Master plan.
  - xi) Write the applications of factorial design in formulations.
  - xii) Types of process validation.
- 2. Solve any five. 35**
- i) Add a note on manufacturing process model for solid dosage form.
  - ii) Describe Heckel plot for compaction of tablet.
  - iii) Discuss GMP for equipment cleaning and maintenance.
  - iv) Explain Physics of Tablet compression.
  - v) Discuss the concept of Optimization.
  - vi) Sales forecasting technique.
  - vii) Factorial designs.
- 3. Solve any two. 20**
- i) Define stability. Explain elaborately about stability testing.
  - ii) Discuss in detail about production management.
  - iii) Give an account on plant requirement, manufacturing and evaluation of large volume Parenterals.

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