

(2 Hours)

[Total Marks: 40]

- Note:** i) All questions are **compulsory**
ii) **Figures** to the right **indicate** full marks

- Q.1 a) Give in brief the scope of Preformulation studies. 2
 b) Enlist the methods for particle size measurement. 1
 c) Define the term Hygroscopicity. 1
 d) State the formula and significance of Hausner's Ratio. 1
 e) Explain the term Intrinsic solubility. 1
 f) What is the significance of partition coefficient in Preformulation studies. 1
 g) With the help of example explain how photolysis affects stability. 2
 h) Enlist the preformulation aspects for development of monophasic liquid dosage forms. 1
- Q2. a) Discuss in detail any two methods to characterize Polymorphs. 3
OR
 a) Explain the terms i) crystal habit ii) Polymorphs iii) Solvates. 3
 b) Describe in detail any two preformulation aspects for development of Tablets. 3
- Q3. a) Elaborate on Sieve analysis for particle size distribution measurements. 3
 b) Write a note on designing preformulation studies. 3
- Q4. a) Discuss the role of Surfactants and Chelating agents in Solubilization. 3
 b) Write in brief on Solid-state stability. 3
OR
 b) Explain in brief about Solution phase stability. 3
- Q5. a) Elaborate on Plastic and Elastic deformation of particles. 3
OR
 a) Give the significance of Angle of repose and Void volume in Powder flow properties. 3
 b) Define Dissolution and explain measurement of intrinsic dissolution rate. 3
- Q6. a) Give the principle of Hot-stage microscopy. 2
OR
 a) Give the principle of Differential Scanning Calorimetry. 2
 b) State with examples, effect of temperature on aqueous solubility. 2
 c) Give any one method to determine partition coefficient. 2