**M. Pharm 1st Semester Examination**

**Subject- Pharmacognosy (MPGI02T)**

**Full Marks- 75 Time – 3 hours**

**Answer any five questions:**

**1. Discuss the principles and instrumentation of IR- spectroscolxy. Mention various factors that affect the vibrational frequencies. (15)**

**2. Give an account of various rules which predict prominent peaks in the mass prominent peaks in the mass spectrum. Discuss the APCI and APPI analyzess of Quadrupole and Time of flight. (15)**

**3. Discuss the following. (15)**

**(a) Ion-Exchange chromatography**

**(b) UHPLC**

**4. Explain the principle, instrumentation and applications of the following. (15)**

**(a) Zone electrophoresis**

**(c) Paper electrophoresis**

**5. Define Brag’s law. Write a brief note on X-ray powder technique. (15)**

**6. Write the principle and applications of DSC. Explain its thermal transitions and instrumentation. (15)**

**7. Write the principle and instrumentation of UV-Visible**

**spectroscopy. (15)**