**M. Pharm 1st Semester Examination**

**Subject- Pharma Chemistry (MPCI0IT)**

**Full Marks- 75 Time – 3 hours**

**Answer any five questions:**

**1. How does chemical shift arise in NMR spectra? How its affected by spin-spin splitting. Give an account of quantum numbers and their role in NMR. (15)**

**2. How molecular ion-peak and base peak in mass spectrum are recognised? Explain write a brief note on Mc Lafferty**

**rearrangement. (15)**

**3. Discuss the principle and instrumentation of DTA (15)**

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

**(a) MALDI**

**(b) Ion- selective electrodes**

**(c) Coloum chromatography**

**5. Explain Bragg’s law. Write the rotating crystal technique in X-ray diffraction. Mention various application of X-ray diffraction. (15)**

**6. Give an account of the principle, instrumentation and applications of capillary electrophoresis and Gel electrophoresis. (15)**

**7. Discuss various chromatographic parameters. Describe isolation of drugs from excipients by chromatographic techniques. (15)**