**M. Pharm 1st Semester Examination**

**Subject- Drug Delivery System (MPHI02T)**

**Full Marks- 75 Time – 3 hours**

**Answer all five questions:**

**1. Explain the physiochemical and biological factors influencing the design of Sustained Release dosage form. (15) ‘or’**

**Write Short notes on (7.5 x2=15) (a) Utility of 3D Printing technique in Pharmaceuticals**

**(b) Tele pharmacy**

**2. Discuss about the formulation and evaluation of Transdermal Drug Delivery System (15)**

**‘or’**

**Discuss in detail Ocular Drug Delivery System (15)**

**3. Enlist the various types of activated Drug Delivery Systems. Describe Osmotic Activated Drug Delivery System in detail (15)**

**‘or’**

**Write Short notes on. (7.5 x2=15)**

**(a) PH activated Drug Delivery System**

**(b) Penetration enhancers in transdermal drug delivery system**

**4. What do you mean by Gastro Retentive Drug Delivery System? Describe the formulation and evaluation of Floating Drug Delivery System in detail. (15)**

**‘or’**

**Write Short notes on (5x3=15)**

**(a) Mucoadhesive polymers**

**(b) Merits and demerits of Buccal Drug Delivery System.**

**(c) Buccal Strips**

**5. Elaborately discuss about the various barriers for Protein Delivery. Add a short note on various formulation approaches for delivery of protein through oral route. (15)**

**‘or’**

**Write short notes on (7.5x2)**

**(a) Newer trends in delivery of vaccines**

**(b) Pharmacogenetics**