**M PHARM**
**(SEM 1) THEORY EXAMINATION 2018-19**
**DRUG DELIVERY SYSTEMS**

***Time: 3 Hours*** ***Total Marks: 75***

**Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.

**SECTION A**

**1. Attempt *all* questions in brief. 10 x 2 = 20**

a. Mention the factors influencing sustained release formulations.

b. Classify polymers on functional basis.

c. Define the terms 'telepharmacy' and 'telemedicine'.

d. State the principles of feedback regulated drug delivery systems.

e. Mention the limitations of gastro-retentive drug delivery systems.

f. Name the barriers of drug permeation through human cornea.

g. Define the term 'penetration enhancer' and give two examples of the same.

h. Mention the evaluation parameters of protein and peptide delivery.

i. Define 'single shot vaccines' and 'mucosal vaccines'.

j. Mention the steps of uptake of antigens.

**SECTION B**

**2. Attempt any *two* parts of the following: 2 x 10 = 20**

a. Describe the various applications of bioelectronic medicines.

b. Mention the role of the various dosage forms to overcome the effects of the barriers to ocular drug delivery.

c. Write a brief note on the formulation approach of transdermal drug delivery systems.

**SECTION C**

**3. Attempt any *five* parts of the following: 7 x 5 = 35**

a. Describe the role of 3D printing in pharmacy.

b. Write short notes on 'enzyme activated drug delivery systems' and 'pH activated drug delivery systems'.

c. Describe the modulation of GI transit time approaches to extend GI transit.

d. Give a neat labeled diagram of human eye explaining the various sites of application of various dosage forms.

e. Describe in brief the evaluation parameters for transdermal drug delivery systems.

f. Explain the role of the various barriers of protein drug delivery and state how to overcome them.

g. Write a brief note on transdermal delivery of vaccines.