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M. PHARM
(SEM-II) THEORY EXAMINATION 2018-19
COMPUTER AIDED DRUG DELIVERY SYSTEM

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 differences between descriptive and mechanistic modeling.

b. Cite two examples of applications of scientifically based QbD.

c. Name the major nucleoside transporters used for computational modeling of drug disposition in human body.

d. Name the various phases of clinical trials.

e. Classify the optimization parameters used in computer aided formulation development.

f. Name the various types of experimental designs.

g. Define virtual trial.

h. Name two important softwares used for computer simulations of proteins and genes.

i. Mention two major limitations of artificial intelligence in healthcare system.

j. Define computational fluid dynamics.

SECTION B

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

a. Define the term 'population modeling' and explain the regulatory views on QbD.

b. Describe the *in silico* modeling techniques used for intestinal permeation of drugs.

c. State the applications of artificial intelligence in pharmacy.

SECTION C

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

a. Mention the significance of statistical modeling in pharmaceutical research and development.

b. Explain the role of the ICH Q8 guidelines on the quality-by-design in pharmaceutical development.

c. Write a brief note on *in silico* modeling of drug disposition by active transport using BBB-choline transporter.

d. Describe the steps involved in computer-aided formulation development of pharmaceutical emulsions.

e. Write down the role of computers in development of clinical data.

f. Mention the role of computers in *in vitro – in vivo* correlation in pharmaceutical formulations.

g. Describe the fields of application of pharmaceutical automation with their advantages and limitations.

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