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MPHARM
(SEM II) THEORY EXAMINATION 2024-25
COMPUTER AIDED DRUG DELIVERY SYSTEM

TIME: 3 HRS

M.MARKS: 75

SECTION A

1. Attempt *all* questions in brief.

10 x 2 = 20

a.	Differentiate between dependent and independent variables.
b.	Define statistical parameters.
c.	What are the elements of QBD?
d.	Mention the importance of screening designs.
e.	What is the importance of IVIVC?
f.	State the advantages of pharmaceutical automation.
g.	What is population modelling?
h.	Mention different software used in optimization of dosage forms.
i.	Define Computational Fluid Dynamics.
j.	What is modeling technique?

SECTION B

2. Attempt any *two* parts of the following:

2 x 10 = 20

a.	Emphasize the history of computers in pharmaceutical research and development.
b.	Explain the modeling techniques of drug absorption.
c.	Discuss the ethics of computing in pharmaceutical research.

SECTION C

3. Attempt any *five* parts of the following:

7 x 5 = 35

a.	Explain Quality-by-Design in Pharmaceutical Development.
b.	Discuss the Computer Simulations in Pharmacokinetics and Pharmacodynamics for the whole organism.
c.	Give general overview of Artificial Intelligence (AI), Robotics and Computational Dynamics in pharmacy.
d.	Explain the parameter sensitivity analysis with the help of a suitable example.
e.	Explain the different levels of In vitro dissolution and in-vitro in-vivo correlation.
f.	Elaborate the gastrointestinal absorption simulation for fed vs. fasted state.
g.	Write detail note on nucleoside transporters.