

M. PHARM. (Pharmaceutics) SEM – II (CBCS – 2019 COURSE) Winter – 2021
SUBJECT : COMPUTER AIDED DRUG DELIVERY DEVELOPMENT

Day Wednesday
Date 01-12-2021

W-20785-2021

Time 02:00 PM-05:00 PM
Max. Marks : 75

N. B. :

- 1) **Q. No. 1 and Q. No. 5 are COMPULSORY.** Out of the remaining answer **ANY TWO** question from each Section.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer books.

SECTION -- I

- Q. 1** Explain screening design and factorial design. **(08)**
- Q. 2** Discuss application of computer-aided techniques in development of pharmaceutical emulsions. **(15)**
- Q. 3** Answer the following: **(15)**
- a) How copyright and trade-secrets are applied in legal protection of innovative uses of computers in R & D?
 - b) Describe computational modeling of drug transport by nucleoside transporters and by organic cation transporters.
 - c) What is quality-by-design in pharmaceutical product development?
- Q. 4** Write notes on **ANY TWO** of the following: **(15)**
- a) Computational modeling of drug distribution.
 - b) Descriptive versus mechanistic modeling.
 - c) Confidence regions.

SECTION – II

- Q. 5** Explain different ways of communication in clinical trial data collection and management. **(07)**
- Q. 6** How model construction is done in gastrointestinal absorption simulation? **(15)**
- Q. 7** Answer the following: **(15)**
- a) What are the applications of computational fluid dynamics to unit operations and processes in pharma industry?
 - b) How artificial intelligence can be integrated in health care and pharmaceuticals?
 - c) What is virtual trial in gastrointestinal absorption simulation?
- Q. 8** Write notes on **ANY TWO** of the following: **(15)**
- a) Computer simulation of the whole organism (level 1 under pharmacokinetics and pharmacodynamics).
 - b) Pure paper-based clinical data collection and data management systems.
 - c) Process of acquiring proprietary e-clinical software from vendors.

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