

M.Sc.(Chem.) Semester - 4 (CBCS) Examination
March/April - 2024 (NEW COURSE)
Pharmaceutical Technology (Core)

Time: 02:30 Hours**Marks: 70****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

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- Q.1 (A) Answer the following question (04)**
(1) Define particle size and explain its importance in pharmaceutical formulations.
(2) Explain the role of SEM and TEM in the characterization of pharmaceutical powders.
- Q.1 (B) Answer any two questions out of three (10)**
(1) Discuss the bulk properties of powders and their implications on formulation development.
(2) Compare and contrast the different methods for particle size reduction in pharmaceutical manufacturing.
(3) Explain the method to determine powder flowability.
- Q.2 (A) Answer the following questions (04)**
(1) Explain the role of preservatives in aqueous solutions.
(2) Describe the types of emulsions.
- Q.2 (B) Answer any two questions out of three (10)**
(1) What are elixirs, and how are they different from other liquid dosage forms?
(2) What are sustained release suspensions, and how are they formulated?
(3) Discuss the theory of emulsions and factors affecting their stability.
- Q.3 (A) Answer the following question (04)**
(1) Explain the advantages and disadvantages of tablet dosage forms.
(2) Outline the objectives of tablet coating
- Q.3 (B) Answer any two questions out of three (10)**
(1) Explain the process of coating tablets, including equipment and evaluation methods.
(2) Discuss the importance of in-process controls during tablet production.
(3) Discuss the granulation techniques used in tablet manufacturing.
- Q.4 (A) Answer the following question (04)**
(1) Define capsules and discuss their advantages and disadvantages.
- Q.4 (B) Answer any two questions out of three (10)**
(1) Describe the production process of hard gelatin capsules.
(2) Discuss the methods used for capsule filling and common problems encountered.
(3) Explain the evaluation parameters for capsules.
- Q.5 (A) Answer the following questions (04)**
(1) Classify excipients based on their functions and provide examples of each category.
(2) Provide an overview of the history of pharmaceutical excipients.
- Q.5 (B) Answer any two questions out of three (10)**
(1) Analyze the properties of excipients and their significance in formulation development.
(2) Discuss the role of excipients in pharmaceutical formulations and their impact on product performance.
(3) Present a case study where the selection and use of excipients were critical in achieving desired formulation outcomes.
