Roll No:

BPHARM
(SEM III) THEORY EXAMINATION 2023-24
PHARMACEUTICAL ENGINEERING

TIME: 3HRS   **M.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.	What is Darcy's law?
b.	Write the applications of centrifugation
c.	What is critical moisture content?
d.	Differentiate between drying and evaporation
e.	Define bound moisture content and equilibrium moisture content
f.	Define molecular distillation
g.	Mention the significance of Raoult's law
h.	Explain the principle of operation of venturimeter
i.	Mention the different mechanisms of filtration
j.	What is work index?

SECTION B

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

a.	Explain with the help of a diagram the principle, construction, working, advantages, disadvantages, and applications of a ball mill. What is critical speed of a ball mill?
b.	With the help of a neat diagram, discuss the concept of film and overall heat transfer in forced convention.
c.	Classify dryers. Write a detailed note on rate of drying curve emphasizing constant rate and falling rate periods.

SECTION C

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

a.	Narrate the design, working and application of cyclone separator.
b.	Explain the working of 2-4 shell and tube heat exchanger with a labelled diagram.
c.	Suggest the various factors affecting rate of evaporation.
d.	Discuss the principle, construction, working, uses, merits and demerits of fluidized bed dryer.
e.	Enlist the various factors affecting material selection for pharmaceutical plant construction
f.	Elaborate the the principle, construction, working, merits and demerits of rotary drum dryer.
g.	Mention the various types of corrosion and ways to avoid them