



International Islamic University Chittagong

Department of Pharmacy

B. Pharm (Hons.) Program

Mid-term Examination

Spring 2024

Course Code: Pharm-3611

Course Title: Pharmaceutical Engineering- I

Time: 1 hour 30 minutes

Full Marks: 30

(Answer any three questions from the followings. Figures in the right margin indicate marks)

1. a) What is calandria? Summarize the distinguishing features of evaporation with other heat process. 1+4
- b) "The economy of multiple effect evaporators is higher than single effect evaporator"- justify. 5

2.

$$M = \frac{KS}{P} (b - b')$$

The equation denotes the mass of vapour formation.

- a) Explain the above mentioned equation. 5
 - b) Construct an evaporating pan mentioning its principle, working, uses, advantage and disadvantages. 5
3. a) What is fluidized state? Introduce a fluidized bed dryer with its application. 1+4
 - b) Define EMC with its application. How would you measure EMC of a material? 2+3
4. a) Outline the working steps of spray dryer with principle and diagram. 5
 - b) "Mass transfer in a material happen in different ways"- Prove the statement. 5