UNIVERSITY OF JAFFNA, SRI LANKA
FACULTY OF ALLIED HEALTH SCIENCES
THIRD YEAR FIRST SEMESTER EXAMINATION IN BPharmHons - 2022
PHAPT 3112 PHARMACEUTICAL TECHNOLOGY I

Date: 18.12.2023   Time: 02 Hours

<u>Answer All Six Questions</u>

<u>Answer Part A & B in separate answer books.</u>

Part A

1.
1.1	1.1.1 List three (03) equipment used in mixing of semisolids.	(15 Marks)
	1.1.2 Explain the various approaches that can be used to avoid vortexing and aeration in the mixing of liquids.	(40 Marks)
1.2	Explain the different stages involved in the formation of crystals.	(45 Marks)

2.
2.1	Write down the working principle of climbing film evaporator.	(45 Marks)
2.2	2.2.1 Briefly explain the different stages involved in the spray drying process.	(45 Marks)
	2.2.2 Give three (03) materials that are dried by spray dryer.	(10 Marks)

3. Briefly describe the
3.1	equipment used for continuous cold extraction.	(40 Marks)
3.2	different types of granular mechanisms in the formation of granules.	(60 Marks)

4. Write an account on
4.1	fractional distillation.	(60 Marks)
4.2	hazards caused by chemicals in industry.	(40 Marks)

Part B

5.
5.1	Define rate of filtration using Darcy's law.	(10 Marks)
5.2	Briefly explain how factors affect the rate of filtration?	(30 Marks)
5.3	Write down the working principle and advantages of rotary filter.	(40 Marks)
5.4	List the material used in the filter medium.	(20 Marks)

6.

    6.1   Drive a relationship for flow velocity (V_1) of a Venturi meter in terms of P_1, P_2, A_1,   **(25 Marks)**
           A_2 and ρ. (P_1 and P_2 are the pressures in pipe and A_1 and A_2 are the cross sectional
           areas of pipe in different locations. ρ is density of the fluid)

    6.2   Flow velocity of water is measured by Venturi meter which has two main diameters   **(20 Marks)**
           such as 3cm and 1cm. Pressure difference was measured using manometer as 18
           mmHg. Determine the flow velocity of water.
           (Density of water and mercury are 1000 kg/m³ and 13600 kg/m³ respectively)

    6.3   Fluid flow through the pipe was studied using Reynolds apparatus. Briefly describe
           the followings.
           6.3.1 Velocity difference across the fluid layers in the tube   **(30 Marks)**
           6.3.2 Formation of boundary layers in the tube   **(25 Marks)**