



UNIVERSITY OF JAFFNA, SRI LANKA
FACULTY OF ALLIED HEALTH SCIENCES
THIRD YEAR FIRST SEMESTER EXAMINATION IN BPharmHons - 2023
PHAPT 3112 PHARMACEUTICAL TECHNOLOGY I

Date: 25.11.2024

Time: 02 Hours

Answer All Six Questions

Answer Part A & B in separate answer books.

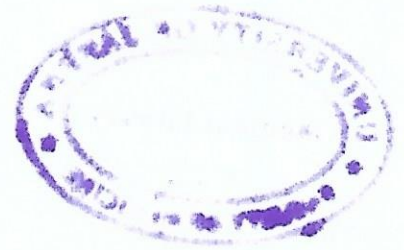
Part A

1.
 - 1.1
 - 1.1.1 List the factors that affect the mixing of powders. (15 Marks)
 - 1.1.2 List the mixers that are used for liquid mixing. (15 Marks)
 - 1.1.3 Briefly explain the mixer that is used for mixing viscous liquids. (30 Marks)
 - 1.2 Give the advantages and disadvantages of continuous cold extraction. (40 Marks)

2. Explain the working principle of
 - 2.1 colloidal mill (30 Marks)
 - 2.2 climbing film evaporator (40 Marks)
 - 2.3 ball mill (30 Marks)

3.
 - 3.1 Briefly describe the characteristics of the product obtained by
 - 3.1.1 freeze drying. (20 Marks)
 - 3.1.2 spray drying process. (20 Marks)
 - 3.2 Explain the different theories for the formation of the bond between particles during compression of the powder bed. (40 Marks)
 - 3.3 List the pharmaceutical applications of the crystallization process. (20 Marks)

4. Write an account on
 - 4.1 stainless steel. (60 Marks)
 - 4.2 fire detectors. (40 Marks)



Part B

- 5.
- 5.1 List the necessary requirements involved in designing a fermenter. (30 Marks)
- 5.2 Briefly describe the different methods that are used in the prevention of wet corrosion. (30 Marks)
- 5.3 Distinguish between stream line flow and turbulent flow based on the Reynolds' experiment. (20 Marks)
- 5.4 A water jet is moving horizontally with a velocity of 12.0 m/s through a pipe with 6.0 cm diameter. Find the kinetic energy of water jet in a second. (Density of water is 1000 kg/m³) (20 Marks)
- 6.
- 6.1 6.1.1 Define relative humidity. (10 Marks)
- 6.1.2 Determine the amount of water vapour present in a volume of 2.0 m³ container when the relative humidity of air and saturation vapour pressure of water vapour of air were 60% and 3.6 kPa respectively at 270 C. (Assume that the universal gas constant R is 8.314 J/mol/K and molecular weight of water is 18.0 g). (30 Marks)
- 6.2 6.2.1 State the second law of thermo dynamics. (10 Marks)
- 6.2.2 Briefly describe the working principle of a refrigerator. (15 Marks)
- 6.2.3 State the heat energy related equation between hot and cold reservoir in a refrigerator. (10 Marks)
- 6.2.4 A heat engine rejects the amount of heat energy to the cold reservoir. The amount of heat energy was two times of the work of engine. Estimate the efficiency of engine. (25 Marks)