

UNIVERSITY OF JAFFNA, SRI LANKA
BACHELOR OF PHARMACY
THIRD YEAR FIRST SEMESTER EXAMINATION – OCTOBER 2019
PHAPT 3153 PHARMACEUTICAL TECHNOLOGY

Date: 13.11.2019

Time: 03 Hours

Answer all eight questions.

Answer parts A and B in separate booklets.

PART - A

1. 1.1 Explain the drying process of solid materials with the help of drying curve. (40 Marks)
- 1.2 Describe the working principle of fluidized bed dryer. (60 Marks)
2. 2.1 List the methods that are used for extraction of herbal drugs. (20 Marks)
- 2.2 List the factors that affect the selection of extraction methods for herbal drugs. (20 Marks)
- 2.3 Describe the working principle of two evaporators that are suitable for viscous liquids. (60 Marks)
3. 3.1 Explain the different types of granulation mechanisms. (50 Marks)
- 3.2 List the subsequent stages that occur in the compression of powders. (20 Marks)
- 3.3 Explain how evaporation occurs in the molecular distillation process? (30 Marks)
4. 4.1 4.1.1 Explain how caking of crystals occurs? (30 Marks)
- 4.1.2 How caking of crystals can be prevented? (20 Marks)
- 4.2 Explain the properties that are required for packaging materials. (50 Marks)
5. Write an account on
- 5.1 chemical hazards in industry. (40 Marks)
- 5.2 spray drying process. (60 Marks)

PART - B

6. 6.1 Briefly describe the working principle of a centrifuge. (20 Marks)
- 6.2 An object is located 30 cm from the center of a steadily rotating centrifuge rotated with one revolution per second. Estimate the linear speed and acceleration of the object. (40 Marks)
- 6.3 Briefly explain the safety procedure for blood spill in a centrifuge. (40 Marks)
7. 7.1 Briefly discuss the following terms based on the Reynold's experiment in fluid dynamics.
- 7.1.1 Laminar flow (15 Marks)
- 7.1.2 Turbulant flow (15 Marks)
- 7.2 Briefly explain importance of Reynolds number in fluid dynamics. (25 Marks)
- 7.3 7.3.1 Define relative humidity. (15 Marks)
- 7.3.2 Vapour pressure of water at 20°C is 2.33×10^3 Pa and vapour pressure density of water at 20°C is 17.2 g/m^3 . Estimate the followings. (Molecular mass of water is 18 g/mole and universal gas constant R is 8.31 J/mol.k)
- 7.3.2.1 Density of water vapour in unit of g/m^3 . (15 Marks)
- 7.3.2.2 Relative humidity at this temperature. (15 Marks)
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8. 8.1 8.1.1 Briefly describe the structure of rotary filter. (20 Marks)
- 8.1.2 List the advantages of the rotary filter. (20 Marks)
- 8.2 Write short note on vapour compression refrigeration cycle. (60 Marks)