

UNIVERSITY OF JAFFNA, SRI LANKA
BACHELOR OF PHARMACY
THIRD YEAR FIRST SEMESTER EXAMINATION – JULY 2013
PHAPT 3105 – PHARMACEUTICAL TECHNOLOGY

Date: 16.08.2013

Time: 02 hours

ANSWER ALL THE EIGHT QUESTIONS

Answer Part A and part B in a separate answer books.

Part A

1. 1.1 Briefly describe the usage of stainless steel in the construction of pharmaceutical plant. (40 marks)
- 1.2 What are the factors should be considered by a pharmaceutical engineer when selecting plant material for construction. (60 marks)
2. 2.1 Define the term “evaporation”. (20 marks)
- 2.2 Briefly describe the factors affecting evaporation of a volatile substance. (40 marks)
- 2.3 Describe the natural circulation evaporators. (40 marks)
3. 3.1 What are the applications of mixtures? (30 marks)
- 3.2 Explain the theory of semi-solid mixing. (30 marks)
- 3.3 Write an account on ‘paddle mixture’. (40 marks)
4. 4.1 List the sources of hazards in the pharmaceutical manufacturing industry. (30 marks)
- 4.2 Briefly explain the manufacturing control procedures in the pharmaceutical industry. (70 marks)
5. 5.1 Define the term “crystallization”. (20 marks)
- 5.2 Describe the crystallization process. (40 marks)
- 5.3 Give two examples for crystallization equipment and describe them. (40 marks)

Part B

6. 6.1. A U-tube manometer containing mercury of density 13600 kg/m³ is used to measure the pressure drop along a horizontal pipe. If the fluid in the pipe is water and the manometer reading is 0.5 m. Calculate the pressure difference between the two tapping points. (30 Marks)
- 6.2. A water jet diameter 0.2 m is being fired horizontally at a vertical wall. If the velocity of the jet is 20 m/s, estimate the force exerted on the wall. (30 Marks)
- 6.3. Briefly describe the importance Reynolds equation in fluid flow. (40 Marks)
7. 7.1. Explain the principles of centrifugation. (30 Marks)
- 7.2. Discuss the steps of serum separation from the blood sample and give the precautions to be taken. (70 Marks)
8. Draw a labeled diagram and explain the function of vapour absorption refrigeration. (100Marks)