

PARUL UNIVERSITY
FACULTY OF PHARMACY
B.Pharm., Winter 2017-18 Examination

Semester: 3
Subject Code: 08101204
Subject Name: Pharmaceutical Engineering

Date: 18-12-2017
Time: 02:00PM to 05:00PM
Total Marks: 75

Instructions:

1. Figures to the right indicate full marks.
2. Make suitable assumptions wherever necessary.

Q.1 Essay type Questions. (Any 2 out of 3) (10 marks each) (20)

1. Draw neat and clean diagram of Venturi meter and discuss its principle, construction, working, advantage, and disadvantages in detail.
2. Give a statement of Fourier's Law. Derive equation for heat transfer by conduction when compound resistance arranged in series.
3. Explain Bernoulli's theorem in detail.

Q.2 Short Essay type Questions. (Any 7 out of 9) (5 marks each) (35)

1. Discuss various factors affecting on selection of material for plant construction.
2. Enlist different types of pumps. Discuss the principles of centrifugal pump and peristaltic pump with diagram.
3. Explain Reynold's experiment.
4. Draw neat and clean diagram of orifice meter and discuss its principle and construction.
5. Define steam trap, give detail account of Float type steam trap and thermostatic trap
6. Write a note on fuels and combustion.
7. Enlist equipments used in heat transfer, and write a note on tube and shell heat exchanger.
8. Discuss dimensional analysis in detail.
9. Define mass transfer and explain its Principle. Write a note on mass transfer in gases

Q.3 Answer in short. (2 marks each) (20)

1. Define unit operation and unit process with examples.
2. Discuss Dalton's law in brief.
3. Give statement and equation of Stefan-Boltzman's law.
4. Draw neat, clean and labeled diagram of Rotameter.
5. Define conduction, convection and radiation with example.
6. Differentiate Blackbody and Grey body.
7. Define and discuss in brief about Tie substance.
8. Write down principle of two film theory in mass transfer.
9. Explain LMTD in detail.
10. Give statement of material balance and energy balance with example.