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Total Number of Pages : 01

B.Pharm
BP304T

3rd Semester Regular Examination 2018-19

PHARMACEUTICAL ENGINEERING

BRANCH : B.Pharma

Time : 3 Hours

Max Marks : 75

Q CODE : E1004

Answer Question No.1 (Part-A) and 02 (Part-B) which are compulsory and any two from Part-C.

The figures in the right hand margin indicate marks.

Part- A

Q1 Objective Answer Type Questions (Answer All) (2 × 10)

- a) What are the filter aids? How is it applied for filtration operation?
- b) State and explain Fourier's law of heat transmission with equation.
- c) Define unbound moisture content, critical moisture content, and bound moisture content.
- d) What are the advantages and disadvantages of perforated basket centrifuge?
- e) What are the laws governing energy and power requirements of mills?
- f) Why sieve analysis is performed? and what do you mean by the expression(-40+45) sieve size? What is nominal size of aperture?
- g) Explain vortex formation scientifically in an agitated liquid? What are the means to prevent it?
- h) Write on advantages of twin shell blender.
- i) Distinguish between
 - (i) evaporation and distillation,
 - (ii) evaporation and drying.
- j) Write on the principle and the application of steam distillation.

Part- B

Q2 Focused-Short Answer Type Questions- (Answer Any SEVEN) (5 × 7)

- a) Discuss on adiabatic and non adiabatic dryers.
- b) Derive the expression for total time of drying.
- c) Derive overall heat transfer coefficients from individual coefficients with necessary figure.
- d) Derive an expression for heat transfer through a cylindrical wall with necessary figure.
- e) Explain size separation based on sedimentation theory with suitable figure.
- f) What is the principle of ball mill ?and write on the mechanism of grinding in a ball mill.
- g) Describe the propeller mixer along with its characteristics and flow pattern and various arrangements for mounting of stirrer in the tank.
- h) Explain the effects of factors that influence evaporation.
- i) Elaborate the concept of multiple effect evaporator, and what are its advantages?

Part-C

Long Answer Type Questions (Answer Any TWO)

- Q3** Describe the McCabe Thiel method for calculation of number of theoretical plates. Discuss on Flash and molecular distillation. **(10)**
- Q4** Write in detail on principle, construction, working, advantages and disadvantages of spray dryer. **(10)**
- Q5** Write on theory of corrosion, types of corrosion and their prevention. **(10)**
- Q6** Derive Bernoulli's equation and what are the applications of Bernoulli's theory. **(10)**