Registration No :

Total Number of Pages : 01

B.Pharm
15PH302

3rd Semester Back Examination 2018-19
PHARM. ENGINEERING - I
BRANCH : B.Pharma
Time : 3 Hours
Max Marks : 100
Q.CODE : E957
Answer Question No.1 (Part-1) which is compulsory, any eight from Part-II and any two from Part-III.
The figures in the right hand margin indicate marks.

Part- I

Q1 **Short Answer Type Questions (Answer All-10)** (2 x 10)
   a) Define critical moisture content and free moisture content.
   b) State and explain Stefan Boltzmann's law of heat radiation.
   c) Justify the statement 'Ball mill is not useful for size reduction of fibrous material'.
   d) What are standard sieves?
   e) What is 'Mixing index'?
   f) What do you mean by vortex? How it can be prevented?
   g) Distinguish surface filtration and depth filtration.
   h) What do you mean by economy of an evaporator?
   i) Classify dryers giving suitable examples.
   j) Distinguish between evaporation and distillation.

Part- II

Q2 **Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)** (6 x 8)
   a) Draw a neat and labeled diagram of a shell-and-tube heat exchanger and describe its construction.
   b) Describe the drying rate curve. Explain its application.
   c) Explain the construction and working of a ball mill.
   d) Describe the working of a cyclone separator with its usefulness.
   e) Describe the equipments for solid-solid mixing of pharmaceutical materials.
   f) With the help of a neat diagram, write about the construction, working and uses of a Silverson mixer-emulsifier.
   g) What are filter aids? Name the filter aids commonly used in pharmacy practice.
   h) Explain the different theories of filtration.
   i) Classify evaporators. Describe construction and working of climbing film evaporator.
   j) What is steam distillation? What are its special advantages?
   k) Discuss the principle, construction, working and uses of spray dryer.
   l) How does sieve analysis help in testing of powder? Explain by using principle and working of sieve shaker machine.

Part-III

Long Answer Type Questions (Answer Any Two out of Four)

Q3 Define Fourier's Law. Write about derivation and applications of Fourier's Law. (16)

Q4 What are constant boiling mixtures? Describe briefly about azeotropic distillation. (16)

Q5 State and explain the theories related to size reduction. (16)

Q6 Write the principle, construction, working, uses, advantages and disadvantages of plate and frame filter press. (16)