JBO-014-1043007 Seat No. _____

M. P. M. (Sem. III) Examination

January - 2020

Pharmaceutical Engineering

Faculty Code : 014
Subject Code : 1043007

Time : **3** Hours] [Total Marks : **75**

Instructions : (1) Figure to the right indicates marks.
(2) Draw neat and clean diagrams as required.

1 Answer the following questions : **10×2=20**

(a) Define mixing index.

(b) Define and classify heat interchanger and heat exchanger.

(c) Write down the difference between surface filtration and depth filtration.

(d) Explain the terms : (1) nominal size of aperture and (2) nominal diameter of the wire.

(e) What is Reynolds number? Write down its application.

(f) What do you mean by simple distillation? Enlist its application.

(g) Define fluid statics and fluid dynamics.

(h) Write down the difference between drying and evaporation.

(i) Define flash distillation and enlist its applications.

(j) Define conduction and convection.

2 Answer any two out of the following : **2×10=20**

(a) With the help of diagram explain Plate and frame filter press.

(b) Explain the theory of drying and drying rate curve in detail.

(c) With the help of diagram explain Multiple effect evaporator and Economy of multiple effect evaporator.

3 Answer any seven out of the following : **7×5=35**

(a) Write down the theory of centrifugation.

(b) Describe the Bernoulli's theorem.

(c) Explain in detail the theories of size reduction.

(d) With the help of diagram explain the construction and working of ball mill.

(e) Explain various mode of motion applied in size separation.

(f) Derive an equation for heat transfer by conduction through compound resistance in series.

(g) Describe the factors affecting mixing of solids.

(h) Explain the construction and working of Silverson Emulsifier with the diagram.

(i) Describe the principle and applications of steam distillation.