

UG Odd Semester (CBCS) Exam., December—2016

PHARMACEUTICAL SCIENCE

(3rd Semester)

Course No. : BPHCC-303

[Pharmaceutical Engineering—I
(Unit Operations—I)*Full Marks : 70**Pass Marks : 28**Time : 3 hours**The figures in the margin indicate full marks
for the questions*Answer **five** questions, selecting **one** from each Unit

UNIT—I

1. (a) Derive the equation for compound resistance in series. 6
- (b) Discuss the temperature gradient in case of parallel and countercurrent heat flow. 8

2. (a) Write a note on the different parts of FMC curve. 5
- (b) Write the principle, working, advantages and disadvantages of tray drier. 9

UNIT—II

3. Write the working principle of the following : 7×2=14
- (a) Ball mill
- (b) Fluid-energy mill
4. (a) Write a note on the material for construction of sieves. 5
- (b) Discuss size separation based on sedimentation theory with reference to Andreassen pipette. 9

UNIT—III

5. Discuss degree of mixing and statistical evaluation parameters for mixing of solids. 14
6. (a) Write the principle and working of planetary mixer. 7
- (b) Write a note on vortex formation, and methods to avoid vortex formation. 7

UNIT—IV

7. Write the principle, working, advantages and disadvantages of an evaporator used for evaporation of thermolabile substances. 14
8. (a) Write the theory of evaporation. 9
(b) How to improve the heat transfer coefficient of an evaporator? 5

UNIT—V

9. (a) Write notes on the following : 4×2=8
(i) Sintered glass filter
(ii) Membrane filter
(b) Write the working principle of cartridge filter. 6
10. (a) Write notes on the following : 4×2=8
(i) Mechanisms of filtration
(ii) Difference between surface and depth filtration
(b) Write the significance of boiling point curve. 6

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