

[Total No. of Questions - 9] [Total No. of Printed Pages - 2]
(2123)

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B. Pharmacy 3rd Semester Examination
(Unit Operation-I Including Engg. Drawing) (O.S.)

HBP-201

Time : 3 Hours

Max. Marks : 80

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt five questions in all, selecting atleast one question from each Section A, B, C & D. Section E (Question 9) is compulsory.

SECTION - A

1. (a) What is Reynold's number? Explain its significance in fluid flow. **(6)**
- (b) Discuss various types of manometers. How will you calculate the frictional loss of mechanical energy during the flow of fluid through a pipe. **(10)**
2. (a) Describe the constructions and functions of fans or blowers. **(8)**
- (b) Write a note on "Air transport". **(8)**

SECTION - B

3. Explain the theory of filtration. Describe the factors affecting the rate of filtration. **(16)**
4. What are solubility curves? Explain the supersaturation theory and its limitations. **(16)**

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SECTION - C

5. (a) Define the terms—Relative humidity, humid heat, humid volume and Dew point. **(8)**
- (b) Describe the method of calculation of humidity, percent humidity and relative humidity by wet bulb temperature method. **(8)**
6. Explain the principle of refrigeration. Describe the construction and working of a refrigerator. **(16)**

SECTION - D

7. (a) Discuss the properties of steel and its applications in pharmaceutical industries. **(8)**
- (b) Describe the factors affecting the choice of materials of construction. **(8)**
8. What do you mean by industrial hazards? Explain the chemical hazards and its safety measures. **(16)**

SECTION - E

9. Write notes on any four:
- (a) Basic equations of fluid flow.
- (b) Flow-meters.
- (c) Pneumatic conveyors.
- (d) Principles of centrifugation.
- (e) Caking of crystals. **(4×4=16)**