



MS-1612010701010100 Seat No. _____

**Master of Pharmacy Management (Sem. I)
(CBCS) Examination**

January - 2018

Unit Operation - I

Time : 3 Hours]

[Total Marks : 80

- Instructions :** (1) Figure to the right indicate marks.
(2) Answer any three questions from each section.
(3) Question one and question five are compulsory.
(4) Draw neat and clean diagram as required.

SECTION - I

1 Answer any seven out of eight : **14**

- (a) Define filter aid with examples.
- (b) Write down the difference between surface filtration and depth filtration.
- (c) Describe Raoul's law. What is its significance?
- (d) Explain the term evaporator capacity.
- (e) Write down the classification of evaporators.
- (f) Write down the difference between plate towers and packed towers.
- (g) Define equilibrium moisture content and write down its application.
- (h) Write down the difference between drying and evaporation.
- (i) Write down the classification of industrial centrifuge.
- (j) Define the term humidity and relative humidity.

2 Answer the following questions :

- (a) Write short note on theory of centrifugation. **7**
- (b) Define Filtration and Explain in detail the factors **6**
affecting filtration.

- 3** Answer the following questions :
- (a) Define refrigeration load and explain the factors affecting refrigeration load. **7**
- (b) Write a short note on azeotropic distillation. **6**
- 4** Answer the following questions :
- (a) Write a short note on dehumidification. **7**
- (b) Describe in detail various factors to be considered during selection of suitable dryer. **6**

SECTION - II

- 5** Answer any **two** out of **three** : **14**
- (a) Explain the Principle, construction, working, advantages and disadvantages of climbing film evaporator.
- (b) Explain the Principle, construction and working of spray dryer.
- (c) Write a short note on flash distillation.
- 6** Answer the following questions :
- (a) Explain the Principle, construction, working, advantages and disadvantages of perforated basket centrifuge. **7**
- (b) Write a short note on filter leaf. **6**
- 7** Answer the following questions :
- (a) Describe in detail various factors affecting evaporation. **7**
- (b) Explain the Principle, construction, working, advantages and disadvantages of cartridge filter. **6**
- 8** Answer the following questions :
- (a) Explain the Principle, construction and working of multi effect evaporator. **7**
- (b) Define humidification and write down its applications. **6**