UKA TARSADIA UNIVERSITY

B.Pharm. (1st Semester)

Subject :030020104-Pharmaceutics I (Unit Operations I)

Duration : 3 Hours   **Max. Marks : 70.**

Instructions:

1. Attempt all questions.
2. Write each section in a separate answer book.
3. Make suitable assumptions wherever necessary.
4. Figures to the right indicate full marks allocated to that question.
5. Draw diagrams/figures whenever necessary.

SECTION - 1

Q-1 (A) Do as directed.   **[07]**

I) Give two examples of filtration equipment used for filtration of concentrated slurry.

II) Write two examples of filter aid.

III) How does viscosity affect rate of filtration?

IV) Define Evaporation.

V) State Duhring's rule.

VI) Which are the two basic types of centrifuges?

VII) Define centrifugation.

Q-1 (B) Answer the following in brief. (Any 4)   **[08]**

I) What is the basic principle of centrifugation?

II) Give statement of Raoult's law.

III) Enlist mechanisms of filtration process.

IV) Differentiate between clarification and filtration.

V) Hoe does temperature affect rate of evaporation?

VI) How does film deposition affect efficiency of evaporator?

Q-2 Answer the following.   **[10]**

A) Discuss factors affecting evaporation.

OR

A) Explain film evaporators.

B) Enlist filtration equipments and describe any one in detail.

OR

B) Write a note on filter aid used in pharmaceutical processing with suitable example.

Q-3 Answer the following in detail. (Any 2)   **[10]**

A) Describe factors affecting rate of filtration.

B) Classify centrifugation equipments and explain perforated basket centrifuge.

C) Explain theory and principle of Centrifugation.

SECTION - 2

Q-4 (A) Do as directed.   **[07]**

I) Define vapor pressure.

II) What are ideal solutions?

III) Define saturated humidity.

IV) Which dryers are used for drying of biological product?

V) Which method of distillation is used for separation of volatile oil from plants?

VI) What is wet bulb temperature?

VII) Define relative volatility.

Q-4 (B) Answer the following in brief. (Any 4) [08]

I) Give statement of Dalton's law along with equation.

II) Explain briefly deviations from Raoult's law.

III) What are azeotropic mixtures?

IV) What do you understand by bound and unbound moisture?

V) Define humid heat and humid volume.

VI) Draw drying curve showing different phases of drying.

Q-5 Answer the following. [10]

A) Describe factors affecting drying.

OR

A) Explain theory of drying with different phases of drying rate curve.

B) Describe molecular distillation.

OR

B) Explain steam distillation along with its mathematical equation.

Q-6 Answer the following in detail. (Any 2) [10]

A) Write a note on psychrometric chart.

B) Explain fluidized bed dryer.

C) Describe factors affecting distillation.