



MCA-003-047304

Seat No. _____

**B. Voc. (Pharm. Analysis & QA) (Sem. III) (CBCS)
Examination**

December – 2016

BVPAQA-304 : Unit Operation - II

Faculty Code : 003

Subject Code : 047304

Time : Hours]

[Total Marks : 70

- Instructions :** (i) All questions are compulsory and carry equal marks.
(ii) Draw diagram and/or scheme wherever necessary.

1 (a) Answer the following questions : **10**

- (1) Define the term 'Drying'.
- (2) In Swenson Walker crystallizer, supersaturation is achieved by _____.
- (3) 'Evaporation is maximum at its boiling point'. True or False?
- (4) Give the full form of CMC and EMC.
- (5) What is bubble point in relation to liquid mixture?
- (6) Enlist the different types of Impellers.
- (7) Write the equation for rate of evaporation.
- (8) Define Distillation.
- (9) Name any two mechanisms for liquid mixing.
- (10) Define bound moisture.

(b) Answer the following questions : **20**

- (1) What is relative volatility? Derive its equation.
- (2) Differentiate Distillation and Evaporation.
- (3) Define crystals and mother liquor.
- (4) Write about the different positions of propeller in liquid mixing used to avoid vortex formation.

- (5) Which are the two most essential things for evaporation?
- (6) Give the applications of evaporation in brief.
- (7) Write the different conditions required for Mier's supersaturation theory.
- (8) Draw a schematic diagram of Steam Jacketed Kettle or Evaporating pan.
- (9) Write a brief note on Baffles.
- (10) Draw a boiling point diagram with indication of each curve.

2 Answer any 4 out of the following 6 questions : **20**

- (1) Explain the simple distillation process with diagram.
- (2) Give a brief account of factors affecting evaporation process.
- (3) Explain in detail 'Drying curve'.
- (4) Draw the different crystal forms with their dimensions of axial length and axial angle.
- (5) Write about the various factors affecting mixing.
- (6) Give a detailed account on Try dryer.

3 Answer any 4 out of the following 6 questions : **20**

- (1) Classify various mixers with example.
- (2) Explain in detail any one equipment in which supersaturation is achieved by cooling alone.
- (3) Give a detailed account on Horizontal tube evaporator.
- (4) Write about the principle, construction, working, advantages and disadvantages of tray dryer.
- (5) Explain in detail the various steps involved in crystallization process.
- (6) Explain Flash distillation in detail.