

**Shree Manibhai Virani and Smt. Navalben Virani Science College (Autonomous), Rajkot**  
Affiliated to Saurashtra University, Rajkot

**SEMESTER END EXAMINATION NOVEMBER – 2017**

**B.Voc. Pharmaceutical Analysis & Quality Assurance**

**BVPAQA-304 - UNIT OPERATION - II**

*Duration of Exam – 2:30 hrs*

*Semester – III*

*Max. Marks – 70*

**Que. 1 (A) – Answer the following Questions**

**[10]**

1. Define Distillation.
2. \_\_\_\_\_ Mixer produces more shear force than propeller mixer.
3. ‘Dew point curve and saturated vapour line are same.’ True or false?
4. Define crystallization.
5. In Swenson Walker crystallizer, supersaturation is achieved by \_\_\_\_\_.
6. Give full form of FMC and EMC.
7. What is drying?
8. ‘Evaporation is maximum at its boiling point’. True or False?
9. What is the basic requirement for distillation?
10. What is bound moisture content in process of drying?

**Que. 1 (B) – Answer the following Questions**

**[20]**

1. Write the equation for rate of evaporation with all denotations.
2. Write in brief about positive and negative mixtures with example.
3. Differentiate Evaporation and Drying.
4. Draw the drying curve.
5. Define magma and mother liquor.
6. Enlist any four types of condensers.
7. Write in brief about polymorphism and isomorphism.
8. What are the conditions required to be followed for Mier’s supersaturation theory.
9. Draw any two crystal forms with their dimensions of axial length and axial angle
10. What is relative volatility? Derive its equation.

**Que. 2 – Answer the following Questions (Any Four)**

**[20]**

1. Write a detailed note on Boiling Point diagram.
2. Explain principle, working, advantages and disadvantages of simple distillation process with diagram.
3. Write a detailed note on fluidized bed dryer.
4. Give a detailed account on horizontal tube evaporator. (Explain with diagram, principle, construction and working).
5. Give a detailed account on Swenson walker crystallizer with schematic diagram.
6. Write about the various factors affecting mixing.

**Que. 3 – Answer the following Questions (Any Four)**

**[20]**

1. Write in brief about the various applications of Distillation.
  2. Explain different steps involved in the process of crystallization.
  3. Classify mixers.
  4. Write about the principle, construction, working, advantages and disadvantages of tray dryer.
  5. Give a detailed account on Flash Distillation with schematic diagram.
  6. Explain in detail Bubble Cap plate column with diagram.
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