

V.P& R.P.T.P SCIENCE COLLEGE  
B.Sc. (Fifth semester)  
INDUSTRIAL CHEMISTRY (Vocational)  
08 /10/2018 [Monday]  
Subject code: US05CICV06  
Internal Exam

Time: 10:00 pm to 12:00 pm

Total marks: [50]

**Q-1 Select the right option from among the given in following question.**

**[08]**

1. In the binary system, separation is efficient when relative volatility is \_\_\_\_\_.
  - a. 1
  - b. < 1
  - c. > 1
  - d. 0.5
2. Azeotropic mixture is \_\_\_\_\_.
  - a. Binary mixture
  - b. Tertiary mixture
  - c. Constant boiling mixture
  - d. None of these
3. Pall ring are available in range \_\_\_\_\_.
  - a. 16 to 50 mm
  - b. 5/8 to 2 inch
  - c. Both a & b
  - d. 5 to 50 mm
4. Berl saddles and intalox saddles are available in range \_\_\_\_\_.
  - a. 6 to 50 mm
  - b. 0.6 to 5.0 cm
  - c. 0.236 to 1.968 inch
  - d. All of these
5. For common salt (NaCl) solubility is \_\_\_\_\_ of variation in temperature.
  - a. Independent
  - b. Dependent
  - c. Both a & b
  - d. None of these
6. In Vacuum crystallizer, supersaturation is achieved by \_\_\_\_\_.
  - a. Evaporation
  - b. Cooling
  - c. Adiabatic evaporation
  - d. Both b & c
7. The function of knife, spreader in drum dryer is to \_\_\_\_\_.
  - a. To scrap of solid from surface
  - b. To remove impurity
  - c. Develop thin film of solid
  - d. None of these
8. Atomizer is the integral part of \_\_\_\_\_ dryer.
  - a. Spray
  - b. Rotary
  - c. Drum
  - d. Tunnel



**Q-2 Answer any five of the following.**

**[10]**

1. Give limitation of McCabe-Thiele method.
2. Explain downcomer or weir.
3. What is channeling in packed columns? How it can be avoided/minimized?
4. Give the difference between distillation and extraction.
5. Write preparation Fehling solution No.1
6. Write the uses of oxalic acid
7. Enlist the properties of Nujol.
8. Enlist various solvents used in HPLC

**Q-3 a. With the help of labeled diagram explain the construction and working of Fractionating column.** **[08]**



b. Derive the q-line equation.

OR

Q-3 a. Write a note on steam distillation. [08]

b. Give the material balance of the fractionating column.

Q-4 a. What factors should be considered while selecting solvent for gas absorption? [08]

b. Write in brief on rotating-disk contactors.

OR

Q-4 a. Draw the neat sketch of packed column used for gas absorption and write its construction and functioning. [08]

b. Draw the neat sketch of packed column used for liquid-liquid extraction and explain in brief.

Q-5 Explain the construction & working of Basket extractor with suitable diagram with its advantages and disadvantages [08]

OR

Q-5 Explain in detail the construction and working of Swenson-walker crystallizer with suitable diagram with its advantages and disadvantages [08]

Q-6 Explain the construction & working of Spray dryer with neat diagram. [08]  
Explain the construction & working of Drum dryer with neat diagram.

OR

Q-6 Explain the construction & working of Tray dryer with neat diagram. [08]  
Explain the construction & working of Tunnel dryer with neat diagram.