SC

SEAT No._____ No. of Printed Pages: 02

[41]

Sardar Patel University

M. Sc. Pharmaceutical Chemistry, Second Semester Examination

Friday, 13th April, 2018

10:00 a.m. – 01:00 p.m.

PS02CPCH23: Modern Analytical Techniques

Note: Max Marks: 70

1. Figures to the right indicate marks.
2. Draw neat and labeled diagram, wherever necessary.

Q-1 Attempt the followings [08 X 01 =08]

1. Precipitation is opposite of what kind of separation technique?
   a) Distillation b) Crystallization
   c) Melt crystallization d) Zone melting
2. Which of the following is a type of distillation process?
   a) Region distillation b) Sector distillation
   c) Zone distillation d) All
3. In chromatography, when the separated component that rises fastest and highest is
   a) The one that is least soluble in solvent
   b) The one that is most soluble in solvent
   c) The one which is present in more quantity
   d) Any one which is brightest all
4. The analyte has more affinity with stationery phase will be separated ___.
   a) Faster b) Slower c) Not affected d) None
5. Which of the following gas is not suitable for use as a carrier gas in GC
   a) Nitrogen b) Helium c) Oxygen d) All
6. More polar analyte interact more _____ with the silica gel as stationary phase in TLC.
   a) Strongly b) Weakly c) Neutral d) None
7. The rate at which DNA migrates through the gel is determined by
   a) Molecular size of the DNA b) Agarose gel concentration
   b) The applied voltage c) All
8. Pore size of the Ro membrane is _____.
   a) 0.1 – 2.0 mm b) 0.05 – 0.1 mm c) <0.5 nm d) >0.5 nm

Q-2 Answer the following questions (**Any seven**). [07 X 02 = 14]

1. What is co-precipitation?
2. What are the types of flows used in membrane-based separations?
3. Give the example of organic material used as stationary phase in TLC.
4. Define the term extraction and filtration
5. What is the function of detector?
6. Define the electrodialysis.
7. What is supercritical temperature?
8. Define gradient separation
9. What is modifier fluid?

C.P.T.O.

Q-3	(A)	Discuss the method of separation of the compound by precipitation.	[06]
	(B)	Factors affecting solvent extraction	[06]
		OR	
	(B)	Distillation process	[06]
Q-4	(A)	procedure and methods of detection Partition Chromatography	[06]
	(B)	solid phase extraction	[06]
		OR	
	(B)	qualitative and quantitative detection by paper chromatography	[06]
Q5	(A)	Describe any one detector used in Gas chromatography	[06]
	(B)	Schematically explain the working of HPLC.	[06]
		OR	
	(B)	Short notes on HPTLC	[06]
Q6	(A)	Principle and Instrumentation of Supercritical fluid chromatography	[06]
	(B)	Describe the principle, method and applications of agarose gel electrophoresis.	[06]
		OR	
	(B)	Advantages and disadvantages of reverse osmosis membrane modules	[06]

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