PSCCHT08 - Analytical Chemistry-II Paper-VIII

P. Pages : 2

Time : Three Hours

||| *1965* |||

GUG/W/22/11231

Max. Marks : 80

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1.	a)	Explain sampling of gases in case of ambient air? What are various tools used in this procedure?	**8**
	b)	Distinguish between the following dissolution methods. i) Dry & Wet ashing. ii) Fusion process & dissolution of organic sample.	**8**

OR

	c)	Outline the analytical procedure for stoichiometry & non – stoichiometry method.	**4**
	d)	Explain role of noise in determination of detection limit of analytical technique.	**4**
	e)	What are the hazards in the sampling?	**4**
	f)	Calculate the concentration of potassium ion g/lit when 100 mL 0.25 M KCl & 200 mL of 0.1M K_2SO_4 are mixed together.	**4**
2.	a)	Discuss the principle & working of gas chromatography.	**8**
	b)	Discuss instrumentation in HPLC with application.	**8**

OR

	c)	Explain Van – Deemter equation & specify it's role in GC.	**4**
	d)	Explain supercritical fluid chromatography and their analytical aspect.	**4**
	e)	Write a note on reverse phase chromatography.	**4**
	f)	Explain factors affecting resolution & peak broadening.	**4**
3.	a)	What are the different types of burners used in flame photometer?	**8**
	b)	Explain the principle of fluorometry on the basis of Jablonski diagram.	**8**

OR

	c)	How the mol. wt of the polymer is determined by nephelometry.	**4**
	d)	Discuss the factors affecting on fluorescence.	**4**
	e)	Sketch the schematic diagram of turbidometer. Explain their construction & working.	**4**
	f)	Discuss applications of phosphometry.	**4**

4.	a)	What are amperometric titration? Give their technique & advantages	8
	b)	Derive equation of polarographic wave & explain its significance.	8

OR

	c)	Give application of polarography in determining dissolved oxygen and metal ion.	4
	d)	Explain. i) Adsorption current. ii) Kinetic current.	4
	c)	Distinguish between the pulse polarography & oscillographic techniques for their analytical aspect?	4
	f)	What was the value of diffusion current if $C = 3 \times 10^{-3}$ moles / lit $D = 7.2 \times 10^{-5}$ cm^2 / se, $m = 3$ mg / sec, $t = 4$ seconds & $n = 2$?	4

5.	a)	Explain the criteria for the representative sample.	2
	b)	Define Limit of detection.	2
	c)	Name any two types of detector used in HPLC.	2
	d)	Define i) Peak resolution ii) Ion retardation	2
	e)	Define. i) Phosphorescence ii) Fluorescence	2
	f)	Draw schematic diagram of nephelometer.	2
	g)	Name any two maximum suppressor used in polarography	2
	h)	Give the advantages of DME.	2

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