ROYAL COLLEGE OF ARTS, SCIENCE AND COMMERCE

SYBSc SEMESTER III SAMPLE PAPER

ANALYTICAL CHEMISTRY (USCH303)

Answer the following using correct option

1 In semi – micro analysis, size of the sample is in the range of _____ to _____ mg. 2
a) 0 to 10
b)10 to 100
c) 100 to 1000
d) 10 to 1000

2 _____ is used for sampling of liquids. 2
a) Hand Scoop
b) Sample probe
c) Concentric tube thief
d) Sample thief

3 Use of poorly calibrated glassware is an example of _____ error. 1
a) Instrumental
b)Methodic
c)Personal
d)Operational

4 Relative error for an observation 5.1 is _____ if the true value is 5.0. 2
a)0.1
b)0.02
c)0.1
d)0.2

5 Bulk material is also called as _____. 1
a) Sample
b) Universe
c) Increment
d) Gross sample

6 Primary standard used in acid-base titration is----. 01
a) Sodium thiosulphate
b) Potassium chloride
c) Zinc sulphate
d) Borax

7 When the precipitate is heated in the temperature of 250^{o}C to 1200^{o}C, it is known as ----. 01
a) Washing

b) Drying
c) Incineration
d) Ageing

8 10.0 cm^3 of 0.1M CH_3COOH was titrated with 0.1 M NaOH at 298 A. The pH of solution after addition of 2.0 cm^3 of 0.1 M NaOH will be ----. 02

(Given: $K_w = 10^{-14}$. $K_a = 1.8 X10^{-5}$)

a) 4.14
b) 3.87
c) 5.78
d) 7.0

9 20.0 cm^3 of 0.05 M Na_2CO_3 reacted completely with 25.0 cm^3 of HCl (Mol. Wt. = 36.5) solution. Concentration in g/dm^3 of HCl is ----. 02

a) 1.46
b) 0.73
c) 2.92
d) 1.825

10 At 298 ^oK solubility product of AgCl (Mol.Wt. = 143.5) is $1.44 X 10^{-10}$. Its solubility in water is ---- g/dm^3. 02

a) 0.001722
b) 0.002066
c) 0.01722
d) 0.02066

11 The unit of molar extinction coefficient is ----. 01

a) $dm^3.mol.cm$
b) $dm^3.mol^{-1}.cm^{-1}$
c) $dm^3.mol.cm^{-1}$
d) $dm^3.cm.mol^{-1}$

12 Hypsochromic effect is also known as ----. 01

a) Green shift
b) Red shift
c) Yellow shift
d) Blue shift

13 The energy associated with wavelength $1.2 X 10^{-6}$ m is ---- J 02

(Given: $c = 3 X 10^8 ms^{-1}$, $h = 6.625 X 10^{-34} Js$)

a) $1.656 X 10^{-19}$
b) $2.385 X 10^{-19}$
c) $1.840 X 10^{-20}$
d) $2.65 X 10^{-20}$

14 A colourlesstitrand is titrated with colourless titrant and coloured product is formed. The absorbance of solution ---- up to 02

equivalence point and ---- after equivalence point.

a) Increases, decreases
b) Decreases, increases
c) Increases, remains constant
d) Decreases, remains constant

15 A 2.5 X 10^{-5}M solution of a substance with molar absorptivity 9000 was placed in a cell of 1.0 cm. The transmittance of the solution is ----. 02

a) 0.225
b) 0.596
c) 0.450
d) 0.298