

**ROYAL COLLEGE OF ARTS, SCIENCE AND COMMERCE**

**TYBSc SEMESTER V SAMPLE PAPER**

**ANALYTICAL CHEMISTRY (USCH504)**

**Answer the following with correct option**

- 1 \_\_\_\_\_ is an intrinsic definition of quality. 01  
a) Reliability  
b) Advertising  
c) Psychology of users  
d) Environment
- 2 \_\_\_\_\_ and \_\_\_\_\_ are used for sampling of liquids. 02  
a) Concentric tube thief and Split tube thief  
b) Sample thief and Multiple tube sampler  
c) Split tube thief and Auger sampler  
d) Concentric tube thief and Geo sampler
- 3 Which of the following is a Concentration unit on weight basis? 02  
a) Normality  
b) Molarity  
c) Formality  
d) Mole fraction
- 4 \_\_\_\_\_ g of NaOH dissolved in 100cm<sup>3</sup> of distilled water gives 0.1 N solution. 02  
a) 0.1  
b) 0.2  
c) 0.4  
d) 0.8
- 5 Sampling of air is called \_\_\_\_\_ sampling. 01  
a) Stack  
b) Ambient  
c) Displacement  
d) Systematic
- 6 Ferroin is an example of \_\_\_\_\_ indicator. 01  
a) Redox  
b) Acid - Base  
c) Metallochromic  
d) Universal
- 7 Ratio of  $[Ce^{3+}] / [Ce^{4+}]$  is \_\_\_\_\_ in the titration of 10 cm<sup>3</sup> of 0.1 M Fe<sup>2+</sup> with 0.1 M Ce<sup>4+</sup> when 11 cm<sup>3</sup> of 0.1 M Ce<sup>4+</sup> is added. 02  
a) 0.1  
b) 1

- c) 10  
d) 100
- 8 The pCa value in the titration of  $10\text{cm}^3$  of  $0.01\text{ M Ca}^{2+}$  with  $0.01\text{ M EDTA}$  when  $0\text{ cm}^3$  of EDTA is added is \_\_\_\_\_. 02  
a) 1  
b) 2  
c) 2.18  
d) 2.48
- 9 Complexometric titrations involve measurement of \_\_\_\_\_. 01  
a)  $[\text{H}^+]$   
b)  $[\text{OH}^-]$   
c) pM  
d) pH
- 10 \_\_\_\_\_ is commonly used titrant in complexometric titrations. 01  
a) NaOH  
b) EDTA  
c) Ethylene diamine  
d) FAS
- 11 In flame photometry, the process of conversion of a sample solution into a fine mist of droplets is called as ----. 01  
a. Excitation  
b. Nebulization  
c. Ionization  
d. Incineration
- 12 In atomic absorption spectroscopy ---- is used as source of radiation. 01  
a. Tungsten lamp  
b. Hydrogen lamp  
c. Silicon carbide rod  
d. Hollow cathode lamp
- 13 Sample cell in fluorimeter is made up of ----. 01  
a. Metal halide  
b. Glass  
c. Quartz  
d. Polythene
- 14 Functional groups such as ---- enhance fluorescence and phosphorescence and functional groups such as ---- decrease fluorescence and phosphorescence. 02  
a.  $-\text{NH}_2, -\text{COOH}$   
b.  $-\text{COOH}, -\text{NO}_2$   
c.  $-\text{NH}_2, -\text{OH}$   
d.  $-\text{NO}_2, -\text{COOH}$

- 15 Semioctagonal sample cell is used in ----. 01
- Colourimeter
  - Spectrophotometer
  - Nephelometer
  - Phosphorimeter
- 16 ---- the charge on metal ion and ---- the  $pK_a$  value of chelating ligand, more stable will be chelate. 02
- Lower, higher
  - Higher, lower
  - Lower, lower
  - Higher, higher
- 17  $(pH)_{1/2}$  of the solution is independent of ----- . 01
- Concentration of metal ions
  - Stability constant
  - Valency of metal ion
  - Temperature
- 18 Instrumentally, HPLC is a type of ---- column chromatography which the sample components are separated by the principle of --- -. 02
- Planar, adsorption
  - Thin layer, absorption
  - Gas, size exclusion
  - Column, partition
- 19 In reverse phase HPLC, the stationery phase is ---- and mobile phase is ----. 02
- Polar, nonpolar
  - Nonpolar, polar
  - Polar, polar
  - Nonpolar, nonpolar
- 20 The detector used in HPTLC is ----. 01
- Electron capture detector
  - UV-visible detector
  - Densitometric scanner
  - Refractive index detector