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DEPARTMENT OF CHEMISTRY
TYBSc-Chemistry-Semester-V
Paper-IV-Analytical Chemistry-Sample Question Bank

Unit-1:

Que .No.	Select correct option
1.	A Standard established by comparison with primary standard is known as _____ (a) Quaternary Reference Standard (b) Secondary Reference Standard (c) Tertiary Reference Standard (d) Quaternary Reference Standard
2.	In Grades of Laboratory reagents, LR is abbreviation of _____ (a) Laboratory Reagent (b) Library Reagent (c) Less Reagent (d) Lower Reagent
3.	Normality is defined as the _____ of a solute present in 1 Liter of Solution (a) Number of Moles (b) Number of atoms (c) Number of equivalents (d) Number of protons
4.	Molality is defined as the number of moles of solute dissolved per _____ of solvent (a) Gram (b) Kilogram (c) Liter (d) mililiter
5.	The Molarity (M) of the 1 Liter Solution containing 40 gm NaOH will be _____ (a) 1 M (b) 40 M (c) 20 M (d) 80 M
6.	The Normality (N) of the 1 Liter Solution containing 40 gm NaOH will be _____ (a) 1 N (b) 40 N (c) 20 N (d) 60 N
7.	_____ type of sampling gives the sample without any bias (a) only Random (b) only Non-random (c) Random and Non-random (d) all
8.	_____ type of sampling appears to be a more scientific method (a) only Random (b) only Non-random (c) Random as well as Non-random (d) Neither Random nor Non-random

9.	_____type of sampling, sample units are drawn in a definite sequence at equal interval from one another (a) only Random (b) only Non-random (c) Random as well as Non-random (d) Neither Random nor Non-random
10.	The minimized sized package in the consignment which the sample may represent is known as _____ (a) Analysis sample (b) Universe (c) Sampling Unit (d) Gross-sample
11.	The stated amount of material to be taken from the sampling unit is known as _____ (a) Increment (b) Analysis Sample (c) Gross Sample (d) Universe
12.	Concentric tube thief equipment is used for sampling of _____ (a) Particulate solids (b) Compact solids (c) Particulate liquids (d) Compact liquids

Unit-II:

Que No.	Select correct option
13.	In Redox reaction, Reduction process involves _____ (a) Addition of electron (b) Removal of electron (c) Removal of proton (d) Removal of neutron
14.	_____ is not the Criteria for reaction in redox titration (a) Reaction should be rapid (b) Reaction should go to the completion (c) Reaction should be stoichiometric (d) Reaction should be slow
15.	In Redox reaction, the Number of electrons donated and number of electrons accepted should be _____ (a) equal (b) zero (c) more (d) less
16.	In Redox titration, the electrode potential is calculated by using _____ (a) Nerst equation (b) First Law of thermodynamics (c) First law of kinetic (d) second law of kinetic
17.	_____ is the first indicator used in the redox titration by Knop in 1924 for the titration of Fe(II) with $K_2Cr_2O_7$ (a) diphenyl amine (b) ferroin (c) starch (d) sulphuric acid

18.	Redox titration, titration curve is the plot of electrode potential of the system Versus _____ (a) Volume of the titrant (b) Weight of the titrant (c) Temperature of the titrant (d) pH of the titrant
19.	Titration of Fe(II) Vs Ce(IV) is the example of _____ (a) one electron system (b) multi-electron system (c) two electron system (d) four electron system
20.	In Fe(II) Vs Ce(IV) Titration H_3O^+ or OH^- _____ directly (a) do not participate (b) may participate (c) always participate (d) must participate
21.	In complexometric titration, K_{MY} is _____ (a) Absolute formation constant (b) Conditional formation constant (c) relative formation constant (d) free formation constant
22.	As pH increases, α_4 values _____ and Conditional formation constant _____ (a) increases, increases (b) increases, decreases (c) decreases, increases (d) decreases, decreases
23.	In complexometric titration, concentration of metal ions _____ during the course of titration (a) remain same (b) changes (c) does not changes (d) maintained constant
24.	_____ is not the type of EDTA titrations. (a) Direct Titrations (b) Back Titrations (c) Alkalimetric Titrations (d) reverse titration
25.	_____ is used as an effective masking agent for EDTA titrations. (a) Cyanide ion (b) Hydroxide ion (c) Halide ion (d) Sulfate

Unit III

26. Atomic absorption spectroscopy is a study of theenergy when the element is heated in the flame

- a) Radiant
- b) Absorption
- c) incident
- d) Transmitted

27. The process to convert sample solution into tiny droplets or aerosol is called as.....

<p>a) preparation b) Nebulization c) sputtering d) Collision</p>
<p>28. In burner the fuel, oxidant gas and liquid sample are thoroughly mixed before entering the flame a) Electrothermal b) Total consumption burner c) Premix d) normal burner</p>
<p>29. Flame photometry is extensively used for estimation of..... a) alkali and alkaline earth metals b) transition metals c) Lanthanides d) inner transition elements</p>
<p>30. In standard addition method the amount of..... remain constant in sample preparation. a) Standard solution b) unknown solution c) internal standard d) Blank</p>
<p>31.is independent of the flame temperature. a) Flame photometry b) Atomic absorption spectrophotometry c) UV spectroscopy d) fluorimeter</p>
<p>32.can be described as the instantaneous re-emission of absorbed light a) fluorescence b) phosphorescence c) transmittance d) Absorbance</p>
<p>33. When the scattering is less due to small concentration of dispersed phase..... gives better result a) turbidimetry b) fluorimetry c) nephelometry d) Flame photometry</p>
<p>34. Inanalysis, particle size is not important a) nephelometry b) turbidimetry c) fluorimetry d) Flame photometry</p>
<p>35. Delayed re-emission of absorbed radiation is called a) fluorescence b) phosphorescence c) transmittance d) absorbance</p>
<p>36. Indetector ions mounted on a turntable for positioning at different angles. a) nephelometer b) turbidimeter c) fluorimeter d) Flame photometry</p>
<p>37.....breaks the beam of radiation coming from the hollow cathode lamp.</p>

- a) mirror
- b) monochromator
- c) rotating chopper
- d) source

38. The most intense lines for potassium corresponding totransition

- a) 3p to 3s
- b) 4p to 4s
- c) 3d to 3p
- d) 4d to 4s

Unit IV

39. Solid phase extraction is very useful because of its solvent consumption

- a) Low
- b) high
- c) moderate
- d) greater

40. Isocratic elution means

- a) double solvent
- b) Triple solvent
- c) mixture of solvents with different composition
- d) mixture of solvents with fixed composition

41. 1,10-phenanthroline is chelate complex

- a) Anionic
- b) cationic
- c) Neutral
- d) chargeless

42. HPLC stands for.....

- a) Highly Pressure Liquid Chromatography
- b) High Performance Liquid Chromatography
- c) High porous liquid chromatography
- d) Highly Placed Liquid Chromatography

43. An isocratic elution in HPLC is one in which the composition of the solvent

- a) remains constant
- b) changes continuously
- c) changes in a series of steps
- d) Change accordingly

44. detector is used in HPLC

- a) Refractive index
- b) Fluorometric
- c) PMT
- d) Photocell

45. HPTLC is achromatographic technique

- a) Reverse
- b) planar
- c) column
- a) d) affinity

46. TBP is used for the separation of

- a) Copper
- b) Iron
- c) Uranium
- d) Alkali metals

47. Greater the number of chelate rings.....is the stability of chelate. a) Lower b) greater c) neutral d) moderate
48. Which of the following HPLC pump has limited solvent capacity? a) Reciprocating b) Displacement c) Reciprocating dual pumps d) Pneumatic pump
49. Column efficiency is measured in terms of number of plates which is a) inversely related to the square of the peak width b) directly related to the square of the peak width c) inversely related to the cube root of the peak width d) directly related to the square of the peak width
50. Which of the following is not an advantage of Syringe type pumps used in High pressure liquid chromatography? a) Independent of viscosity b) Pulse-less flow c) High pressure capability d) Unlimited solvent capacity

Answer Key

UNIT-I & II

1. a	2. a	3. c	4. b	5. a
6. a	7. a	8. b	9. b	10. c
11. a	12. a	13. a	14. d	15. a
16. a	17. a	18. a	19. a	20. a
21. a	22. a	23. b	24. d	25. d

UNIT-III & IV

26. b	27. b	28. c	29. a	30. b
31. b	32. a	33. c	34. b	35. b
36. a	37. c	38. b	39. a	40. d
41. b	42. b	43. a	44. a	45. b
46. c	47. b	48. b	49. a	50. d