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كيمياء تحليلية صيدلانية (2) - ()- المستوى الثاني -قسم صيدلة - الكل - الصيدلة - الفترة الاولي- درجة الامتحان (75)

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1) 1. Which of the following is the correct definition of oxidation?
- 1) - A) Gaining electrons
- 2) + B) Losing electrons
- 3) - C) Gaining protons
- 4) - D) Losing neutrons

2) 2. What is the oxidation number of chromium in $K_2Cr_2O_7$?
- 1) - A) +3
- 2) + B) +6
- 3) - C) +7
- 4) - D) +2

3) 3. In a redox reaction, which of the following occurs?
- 1) - A) Oxidation only
- 2) - B) Reduction only
- 3) + C) Both oxidation and reduction
- 4) - D) Neither oxidation nor reduction

4) 4. In a Zn/Cu galvanic cell, whichof the following occurs?
- 1) - A) Zinc is reduced and copper is oxidized
- 2) + B) Copper is reduced and zinc is oxidized
- 3) - C) No oxidation or reduction occurs
- 4) - D) Proton transfer occurs instead of electron transfer

5) 5. What is the function of a reducing agent in a redox reaction?
- 1) - A) Gains electrons
- 2) + B) Loses electrons
- 3) - C) Increases the oxidation number of the oxidizing agent
- 4) - D) Decreases the oxidation number of the oxidizing agent

6) 6. During the titration of Fe^{2+} with potassium permanganate (KmnO_4), what happens at the endpoint?
- 1) - A) The color disappears
- 2) + B) A faint pink color appears
- 3) - C) The solution turns blue
- 4) - D) A solid precipitate forms

7) 7. According to the Nernst equation, which factor does NOT affect electrode potential?
- 1) - A) Temperature
- 2) - B) Ion concentration
- 3) - C) Number of electrons in the reaction
- 4) + D) Atmospheric pressure

8) 8. Which of the following is used as a standard reference electrode in electrochemical cells?
- 1) - A) Zinc electrode
- 2) - B) Copper electrode
- 3) + C) Standard hydrogen electrode
- 4) - D) Silver/silver chloride electrode

9) 9. Acid-base Titration Curve
- 1) - A) It is the plot of potential (E, volts) versus the volume (ml) of titrant
- 2) + B) .It is the plot of pH versus the volume (ml) of titrant
- 3) - C) .It is the plot of PM versus the volume (ml) of titrant
- 4) - D) All of the above

10) 10. Complexes Titration Curve
1) - A) It is the plot of potential (E, volts) versus the volume (ml) of titrant
2) - B) It is the plot of pH versus the volume (ml) of titrant
3) + C) It is the plot of PM versus the volume (ml) of titrant
4) - D) All

11) 11. Redox Titration Curve
1) + A) It is the plot of potential (E, volts) versus the volume (ml) of titrant
2) - B) .It is the plot of pH versus the volume (ml) of titrant
3) - C) .It is the plot of PM versus the volume (ml) of titrant
4) - D) All

12) 12. It is the electrode at which the reaction taken place?
1) + A) Indicator electrode
2) - B) Counter electrode
3) - C) Salt electrode
4) - D) Reference electrode

13) 13. How would the addition of an ionization suppressor, such as ethanol, affect the stability of a metal complex?
1) + A) Increase it.
2) - B) Unpredictable change.
3) - C) Have no effect.
4) - D) Decrease it.

14) 14. Substance which accept electrons with transformation into lower valency and is reduced.
1) + A- Oxidizing Agent
2) - B- reducing C-Oxidation
3) - D- None of the above
4) - D- all of the above

15) 15- The Substance which accepts electrons with transformation into lower valency and is reduced is called:
1) + (A) Oxidizing Agent
2) - (B) Reducing Agent
3) - (C) Complexing agent
4) - (D) Precipitating agent

16) 16- The oxidation number of N in NH3 is:
1) + (A) N =−1
2) - (B) N =−3
3) - (C) N = + 3
4) - (D) N = + 1

17) 17- The oxidation number of Oxygen in hydrogen peroxide (H2O2) is:
1) + (A) O =−1
2) - (B) O =−2
3) - (C) O = 0
4) - (D) O =−4

18) 18- Which of the following is the plot of potential (E, volts) versus the volume (mL) of titrant.
1) - (A) Precipitation titration Curve
2) + (B) Redox titration curve
3) - (C) Acid-base titration curve
4) - (D) none of the above

19) 19- Which of the following indicators are used as internal redox indicator:
1) - (A) Potassium permanganate (KMnO4)
2) - (B) Fluorescein and eosin

3) + (C) Diphenylamine and Ferroin indicator
4) - (D) Phenolphthalein and methyl red

20) 20- EDTA has _____ binding sites and therefore it is also called as multidentate ligand.:
1) + (A) Six
2) - (B) Five
3) - (C) Four
4) - (D) Seven

21) 21- Calcium containing compound are analysed by?
1) - (A) Aqueous titration
2) - (B) Non-aqueous titration
3) + (C) Complexometric titration
4) - (D) Potentiometric titration

22) 22- Erichrome black -T is used as indicator in which type of titration
1) - (A) NMR
2) - (B) non-aqueous titration
3) - (C) Acid base titration
4) + (D) Complexometric titration

23) 23- Which of the following indicators are used as Oxidation-Reduction (redox indicator):
1) - (A) Eriochrome black T
2) + (B) Ferroin and Ferricyanide
3) - (C) Murexide indicator
4) - (D) Both (A) and (C)

24) 24- What is the effect of the higher log Kst on the stability of the complex:
1) + A. A log Kst, increases the stability of the complex
2) - B. Higher log Kst, decreases the stability of the complex
3) - C. Higher log Kst, does not affect stability of the complex
4) - D. none of the above

25) 25-Which of the following is the a commonly used complexing agent in complexometric titrations and contains 6 coordination atoms?
1) - A) Eriochrome black T
2) + B) EDTA
3) - C) Phenolphthalein
4) - D) Ethylenediamine

26) 26- What is the effect of the small ionic radius (i.r) of the metal (cation) on the stability of the complex:
1) + A. Increases the stability of the complex
2) - B. Decreases the stability of the complex
3) - C. Does not affect stability of the complex
4) - D. None of the above

27) 27- What is the effect of high electric charge carried by the ion on the stability of the complex:
1) + A. high electric charge carried by the ion, increases the stability of the complex
2) - B. high electric charge carried by the ion, decreases the stability of the complex
3) - C. high electric charge carried by the ion, does not affect stability of the complex
4) - D. None of the above

28) 28- Which of the following anions has the highest complexation tendency:
1) + A. Iodide anion (I-)
2) - B. Chloride anion (CL-)
3) - C. Bromide anion (Br-)
4) - D. Fluoride anion (F-)

29) 29- What is the effect of the temperature on the stability of the complex:

1) - A. The increase in the temperature, increases the stability of the complex
2) + B. The decrease in the temperature, decreases the stability of the complex
3) - C. The increase in the temperature, does not affect stability of the complex
4) - D. The increase in the temperature, decreases the stability of the complex

30) 30- Ethylene Diamine (NH2CH3CH2NH2) is an example of:
1) - A. Multidentate legand
2) - B. Monodentate legand
3) + C. Bidentate legand
4) - D. Both (b) and (c)

31) 31. In coordination complexes, what role does the metal ion (cation) typically play?
1) - A) Catalyst
2) - B) Neutral participant
3) + C) Electron acceptor
4) - D) Electron donor

32) 32. in a complexation reaction, what is the coordination number?
1) - A) The charge of the central metal ion.
2) + B) The maximum number of bonds formed by the central metal ion.
3) - C) The oxidation state of the ligand.
4) - D) The number of ligands in the complex

33) 33. What classifies a ligand as multidentate?
1) - A) It binds to multiple metal ions.
2) - B) It contains only one coordinating atom.
3) + C) It contains more than two coordinating atoms in the molecule.
4) - D) It forms only ionic bonds.

34) 34. It is the most widely used metal indicator in EDTA titrations. It is suiatable for determination of most of the metals :
1) - A- Murexide indicator
2) + B-Eriochrome Black TP
3) - C-Metal lon (Metallochromic) Indicators
4) - D- all of the above

35) 35. The change in equilibrim from M-In to M-EDTA should be:
1) - A- sharp & slow
2) - B-obtuse & rapid
3) + C- sharp& rapid
4) - D- None of the above

36) 36. Complexones are aminopolycarboxylic acids (rather than acetate)are Excellent complexing agents.
1) + A-True
2) - B-False

37) 37. EDTA has :
1) - A. 2 Nitrogens , 2 Oxygens
2) - B. 4 Nitrogens , 4 Oxygens
3) - C. 4 Nitrogens , 2 Oxygens
4) + D. 2 Nitrogens , 4 Oxygens

38) 38. As Kst value increases, as the stability of the complex :
1) - A. decreases
2) + B. increases
3) - D. All answers
4) - C. No answers

39) 39. They are aminopolycarboxylic acids (rather than acetate) are excellent complexing agents .

1) - A. Enzymes
2) + B. Complexones
3) - D. Carbohydrates
4) - C. Lipids

40) 40. Complexone II and III Contain :
1) - A. 2 donor groups
2) - B. 4 donor groups
3) + C. 6 donor groups
4) - D. 8 donor groups

41) 41. The most common ligand used is :
1) - A. Monodentate
2) + B. Multidentate
3) - C. Bidentate
4) - D. All answers

42) 42. Water is :
1) + A. Monodentate ligand
2) - B. Bidentate ligand
3) - C. Multidentate ligand
4) - D. No answers

43) 43. It's a bidentate ligand :
1) - A. CN-
2) - B. I-
3) + C. Ethelene diamine
4) - D. NH3

44) 44. It is mainly used for the titration of calcium at pH 12 :
1) - A. Ph.Ph
2) - B. Methyl Orange
3) + C. Meruxide indicator
4) - D. EBT

45) 45. In complexometry , the complexing agent works as :
1) - A. Electron acceptor
2) + B. Electron donor
3) - C. All answers
4) - D. No answers

46) 46. O.N of C in Methanol (CH3OH) is :
1) - A. +2
2) + B. -2
3) - C. -1
4) - D. Zero

47) 47. O.N of N in NH2OH is :
1) - A. -2
2) - B. -3
3) + C. -1
4) - D. +1

48) 48. O.N of S in Na2SO3 is :
1) - A. -3
2) - B. +2
3) - C. +1
4) + D. +4

49) 49. O.N of N in NaNO2 is :
1) - A. Zero
2) + B. +3
3) - C. +2
4) - D. -1

50) 50. O.N of S in (SO2)-2 is :
1) + A. +2
2) - B. -4
3) - C. -2
4) - D. +4

51) 51. O.N of O in H2O2 is :
1) + A. -1
2) - B. +1
3) - C. Zero
4) - D. No answers

52) 52. O.N of Fe in Fe2O3 is :
1) - A. -3
2) + B. +3
3) - C. -6
4) - D. +2

53) 53. O.N of N in Ammonia (NH3) is :
1) - A. +1
2) - B. Zero
3) - C. +3
4) + D. -3

54) 54. O.N of C in Benzene (C6H6) is ?
1) - A. Zero
2) - B. +1
3) + C. -1
4) - D. No answers

55) 55. O.N of C in Aspirin (C9H8O4) is :
1) - A. +1
2) - B. -1
3) + C. Zero
4) - D. No answers

56) 56. O.N of Cl in NaCl is:
1) - A. Zero
2) + B. -1
3) - C. +1
4) - D. No answers

57) 57. O.N of S in H2SO4 is :
1) + A. +6
2) - B. -2
3) - C. +4
4) - D. Zero

58) 58. O.N of P in (H2P2O7)-2 is :
1) - A. +2
2) - B. -3
3) - C. -7

4) + D. +5

59) 59. O.N of S in H2SO4 is :
1) + A. +6
2) - B. -2
3) - C. +4
4) - D. Zero

60) 60. O.N of H in LiH is:
1) - A. Zero
2) - B. +1
3) + C. -1
4) - D. No answers