CENTURION UNIVERSITY OF TECHNOLOGY AND MANAGEMENT,ODISHA
CUEE-2015

CHEMISTRY

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1. 0.5 g of a metal on oxidation gave 0.79g of its oxide. The equivalent weight of the metal is

(a) 10 (b)14

(c) 20 (d) 40

2. 3,3-dimethyl-2-butanol on reaction with HCl yields mainly

(a) 2-chloro-2,3-dimethylbutane

(b) 1-chlore-2,3-dimethylbutane

(c) 2-chloro-3,3-dimethylbutane

(d) 1-chloro-3,3-dimethylbutane

3. Which of the following sets of quantum numbers is permissible for an electron in an atom?

(a)n=2,l=1,m=0,s=+1/2

(b) n=3,l=1,m=-2,s=-1/2

(c) n=1,l=1,m=0,s=+1/2

(d) n=2, l=0,m=0,s = 1

4. Rosenmund's reaction can be used to obtain:

(a)Alkanes

(b)Alkenes

(c)Alcohols

(d)Aldehydes

5. Bond order of O_2^- is

(a)2.5 (b)1.5

(c)2 (d)0

6. A compound 'X' with molecular formula C_3H_8O can be oxidized to a compound 'Y' with the molecular formula $C_3H_6O_2$. 'X'ismost likely to be a

(a) Primary alcohol

(b) sec- alcohol

(c)Aldehyde

(d)Ketone

7. At Boyle's temperature, compressibility factor 'Z' for a real gas is

(a)Z=1 (b)Z=0

(c)Z>1 (c)Z<1

8. The unit cell present in ABC ABC.....Packing of atoms is

(a)hexagonal

(b)tetragonal

(c)face-centred cubic

(d)primitive cube

9. One mole of ice is converted into water at 273k. The entropies of H_2O(s) and H_2O(l) are 38.20 and 60.01J $mol^{-1}k^{-1}$ respectively. The enthalpy change for the conversion is

(a)59.54J mol^{-1} (b)5954Jmol^{-1}

(c)595.4Jmol^{-1} (d)320.6Jmol^{-1}

10.Which of the following is a conjugate acid base pair?

(a)HCl,NaOH (b) NH_4Cl, NH_4OH

(c)H_2SO_4 ,HSO_4^- (d)KCN ,HCN

11. In the precipitation of III group in qualitative analysis, NH_4Cl is added before NH_4OH to:

(a) Decrease concentration of OH^- ions

(b) Decrease concentration of PO_4^{3-} ions

(c)Increase the concentration of NH_4^+ ions

(d) None

12.The molar conductance of HCl,NaCl and CH_3COONa are 462,126, and 91 Ohm^{-1} cm^2mol^{-1} respectively .The molar conductance for CH_3COOH is

(a)561 $Ohm\Omega^{-1}cm^2mol^{-1}$

(b)391 Ohm$\Omega^{-1}cm^2mol^{-1}$

(c)261 $\Omega Ohm^{-1}cm^2mol^{-1}$

(d)612$\Omega Ohm^{-1}cm^2mol^{-1}$

13. The charge required for the reduction of 1 mol of $K_2Cr_2O_7$ to Cr^{3+} ion is

(a)0.6 faraday

(b)2.4 x96500C

(c)6 x96500C

(d)12.4 x96500F

14. A radioactive element has a half life period of 140 days.How much of it will remain after 1120 days.

(a)1/32

(b)1/250

(c)1/512

(d)1/128

15.The specific reaction rate constant for a first order reaction is $1x10^{-3}$ sec^{-1}.If the initial conc. of reactant is 1 mole per litre,the rate is

(a)10^{-4} M sec^{-1}

(b) 10^{-3} M sec^{-1}

(c)10^{-2} M sec^{-1}

(d) 10^{-1} M sec^{-1}

16. The number of α and β particles emitted in the nuclear reaction $_{90}Th^{228}$ to $_{83}Bi$ ^{212}are

(a)4α and 1β

(b)3α and 7β

(c)8$\alpha$and 1β

(d)4α and 7β

17. Gold number is a measure of:

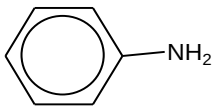
(a) Stability of colloidal system

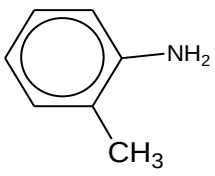
(b) Coagulating power of a colloid

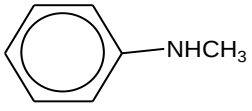
(c) Size of colloidal particles

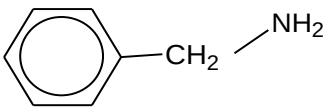
(d) Efficiency of the protective colloid

18. Which of the following is the strongest base?

(a) 

(c) 

(b) 

(d) 

19.Lunar caustic is

(a)NaOH (b)KOH

(c)Ba$(OH)_2$ (C)AgNO_3

20. What is the oxidation state of iron in $K_3[Fe(CN)_6]$?

(a)+2 (b)+3

(c)+4 (d)-3

21. Reimer-Tiemann reaction involves a

(a)Carbonium ion intermediates

(b)Carbene intermediate

(c)Carbanion intermediate

(d)Free radical intermediate

22. IUPAC name of Gammexene is

(a)Hexachlorobenzene

(b)Benzene Hexachloride

(c)1,2,3,4,5,6-Hexachlorocyclohexane

(d)None of these

23. The pH of 10^{-8} M HCl solution is

(a) 8 (b) 6

(c) 6.98 (d) 7.02

24. The order of reactivity of various alkyl halides towards SN_1 reaction is

(a) $3^0 > 2^0 > 1^0$ (b) $1^0 > 2^0 > 3^0$

(c) $3^0 = 2^0 = 1^0$ (d) $1^0 > 3^0 > 2^0$

25. Which of the following compounds on oxidation gives benzoic acid?

(a)Chlorophenol

(b) Chlorotoluene

(c)Chlorobenzene

(d)Benzyl Chloride

26. When ethyl alcohol is distilled with concentrated sulphuric acid under reduced pressure, the

product is

(a)Ethyl hydrogen sulphate

(b)Ethylene

(c)Diethyl sulphate

(d)Diethyl ether

27. Which of the following ketone will not respond to iodoform test?

(a)3-Methylbutan-2-one

(b)Ethyl isopropylketone

(c)Methyl phenyl ketone

(d)Dimethyl ketone

28. Solubility of $Ca(OH)_2$ is 'S' mol L^{-1}. The solubility product (K_{sp}) under the same condition is

a) $4S^3$
b) $3S^4$
c) $4S^2$
d) S^3

29. Ethanal is treated with ammonia and adduct formed is warmed. The final product is

(a)Acetaldehyde ammonia

(b)Acetaldimine

(c)Tetramethylene hexamine

(d)Ethyl amine

30. The compound with a formula H_2NCH_2COOH behave as

(a)Strong acid

(b)Strong base

(c) Amphoteric substance

(d)Strong reducing agent

31. The mixture of formic acid and acetic acid vapours are passed over heated manganous oxide at 575 K. The main product is

(a)Ethyl ethanoate

(b)Methyl formate

(c)Acetone

(d)Acetaldehyde

32. Which of the following acid can show optical isomerism?

(a)2,2-Dimethylpropanic acid

(b)2-methylpropanoic acid

(c)2-methylbutanoic acid

(d)Ethanoic acid

33. Acetamide changes into methylamine by

(a)Hofmann bromide reaction

(b)Hofmann reaction

(c)Friedal-Craft's reaction

(d)Hinsberg reaction

34. Which of the following reagent can be used to convert benzene diazonium chloride to benzene?

(a)Phosphorus acid

(b)Phosphoric acid

(c)Hypophosphoric acid

(d)Metaphosphoric acid

35. Which of the following will give primary amine on hydrolysis

(a)Nitroparaffin

(b)Alkyl cyanide

(c)Oxime

(d)Alkyl isocyanide

36. Which of the following is a condensation polymer?

(a)Polystyrene

(b)Neoprene

(c)PAN

(d)Nylon-6,6

37. Insulin is

(a)Hormone

(b)Vitamin

(c)Antibiotic

(d)Antiseptic

38. Teflon is a polymer of

(a)Tetrafluoroethylene

(b)Tetraiodoethylene

(c)Tetrabromoethylene

(d)Tetrachloroethylene

39. Recently discovered allotrope of Carbon is

(a) Diamond

(b) Graphite

(c) Fullerene

(d) Carbon Nano Tube

40. Ferric ion forms a Prussian blue coloured ppt. Due to the formation of

(a)$K_4[Fe(CN)_6]$

(b) $Fe_4[Fe(CN)_6]_3$

(c)$KMnO_4$

(d)$Fe(OH)_3$

41. The presence of NH_4^+ radical in solution can be detected by

(a)Fehling's solution

(b) Benedict's solution

(c)Schiff's reagent

(d)Nessler's reagent

42. Blue borax bead is given by

(a)Zn

(b) Cobalt

(c)Chromium

(d)Fe

43. In which, addition does not occur according to Markownikov's rule

a) $CH_3CH = CH_2 + HCl \xrightarrow{ROOR}$,

b) $CH_3 CH = CH_2 + HBr \xrightarrow{ROOR}$,

c) $CH_3CH = CHCH_3 + HBr \xrightarrow{ROOR}$,

d) $CH_2 = CH_2 + HI \xrightarrow{ROOR}$,

44. For an ionic solid of general formula AB and co-ordination number 6, the value of the radius ratio will be

a) less than 0.225

b) In between 0.225 and 0.414

c) In between 0.414 and 0.732

d) Greater than 0.732

45. Example of a basic buffer is

a) mixture of HCl& CH_3COONa

b) mixture of CH_3COOH & CH_3COONa

c) mixture of NH_4OH & NH_4Cl

d) mixture of NaOH&NaCl

46. Permanent hardness of water is due to the presence of

a) Chlorides of Calcium and Magnesium

b) Sulphates of Calcium and Magnesium

c) Chlorides &sulphates of Calcium and Magnesium

d) Chlorides, Sulphates, Carbonates & Bicarbonates of Calcium and Magnesium

47. Lanthanide contraction is caused due to

a) The imperfect shielding on outer electrons by 4f electrons from the nuclear charge
b) The appreciable shielding on outer electron by 4f electrons from the nuclear charge
c) The appreciable shielding on outer electron by 5d electrons from the nuclear charge
d) The same effective nuclear charge from Ce to Lu

48. IUPAC name of $CH_2=CH-CH_2-C\equiv CH$ is:

a) pent-1-en-4-yne

b) pent-4-en-1-yne

c) pent-4-yn-1-ene

d) pent-1-yn-4-en

49. The reaction CH_3-CH(Br)-CH_3 +KOH (alcoholic) → CH_2=CH_2 +KBr+H_2O

a)rearrangement reaction

b)addition reaction

c)substitution reaction

d)elimination reaction

50. The main Green House gas is

a) Oxygen

b) Nitrogen

c) Carbon Monoxide

d) Carbon dioxide

Answer

1. B
2. A
3. A
4. D
5. B
6. A
7. A
8. C
9. B
10. C
11. A
12. B
13. C
14. B
15. B
16. A
17. D
18. A
19. D
20. D
21. B
22. D
23. C
24. A
25. D
26. C
27. B
28. A
29. A
30. C
31. D
32. C
33. A
34. C
35. D
36. D
37. A
38. A
39. C
40. B
41. D
42. B
43. D
44. C
45. C
46. C
47. B
48. D
49. C
50. D