CHEMISTRY

BOOKS - KCET PREVIOUS YEAR PAPERS

MODEL TEST PAPER 3

Chemistry

1. The statement that is not correct for periodic classification of elements is:

A. For transition elements the d-subshells are filled with electrons monatomically with increase in atomic number

B. The properties of elements are the periodic functions of their atomic numbers

C. The first ionisation energies of elements along a period vary in a regular manner with increase in atomic number

D. Non-metallic elements are lesser in number than metallic elements.

Answer: C

Watch Video Solution

2. The bond between two identical non-metal atoms has a pair of electrons

A. Transferred fully from one atom to another

B. Unequally shared between the two

C. Equally shared between them

D. With identical atoms

Answer: C

Watch Video Solution

3. Which is not easily precipitated from aqueous solution?

A. CO_3^{2-}

B. SO_4^{2-}

C. NO_3^-

D. CI^-

Answer: C

Watch Video Solution

4. The number of d-electrons Fe^{2+} (Z=26) is not equal to that to the

A. d -electrons in Fe

B. p -electrons in Ne (at. no. = 10)

C. p -electrons in CI^- (at. no. of Cl= 17)

D. s -electron in Mg (at. no. = 12)

Answer: C

Watch Video Solution

5. The compound with the highest boiling point is

A. CH_3Br

B. CH_3OH

C. C_2H_5OH

D. CH_4

Answer: B

Watch Video Solution

6. If the solubility product of $AgBrO_3$ and Ag_2SO_4 are 5.5×10^{-5} and 2×10^{-5} respectively, the relationship between the solubilities of these have correctly represented as

A. A) $sAgBrO_3 \equiv Ag_2SO_4$

B. B) $sAgBrO_3 < sAg_2SO_4$

C. C) $sAgBrO_3 = sAg_2SO_4$

D. 4) $sAgBrO_3 > sAg_2SO_4$

Answer: B

Watch Video Solution

7. Which is not a Lewis acid?

A. $SnCl_2$

B. $MgCl_3$

C. CCl_4

D. $RMgX$

Answer: C

Watch Video Solution

8. E° for a cell having,

$Fe \to Fe^{2+} + 2e, E^\circ = 0.40V\, Zn \to Zn^{2+} + 2e, E^\circ = 0.76V$

A. 0.36 V

B. $-0.\ 36V$

C. $-1.\ 16V$

D. $1.16V$

Answer: A

Watch Video Solution

9. Calculate the volume of hydrogen at NTP obtained by passing a current of 0.4 ampere through acidified water for 30 minutes

A. A) 0.836 litre

B. B) 0.1672 litre

C. C) 0.0432 litre

D. D) 0.0836 litre

Answer: D

Watch Video Solution

10. One of the following is not an example for a redox reaction , it is :

A. $HCI + H_2O \rightarrow H_3O^+ + CI^-$

B. $Cu^{2+} + Zn \rightarrow Zn^{2+} + Cu$

C. $2H_2 + O_2 \rightarrow 2H_2O$

D. $CI_2 + 2H_2O + SO_4 \rightarrow 4H^+ + SO_4^{2-} + 2CI^-$

Answer: A

Watch Video Solution

11. The atomic weight of a metal (M) is 27 and its equivalent weight is 9, the formula of its chloride will be

A. MCl_3

B. MCl_9

C. M_3Cl_4

D. MCl

Answer: A

Watch Video Solution

12. An atom of radium combines with two atoms of chlorine to form $RaCl_2$ molecule. The radioactivity $RaCl_2$

A. One half of the same quantity Ra

B. One third of the same quantity of Ra

C. As much as that of the same quantity of Ra

D. Zero

Answer: C

Watch Video Solution

13. Total number of valency electrons in phosphonium ion PH_4^+ is

A. 18

B. 32

C. 8

D. 16

Answer: C

Watch Video Solution

14. KE of one mole of He at $0^{o}C$ is

A. 84.43 cal

B. 8.143 cal

C. 819.0 cal

D. none of these

Answer: C

Watch Video Solution

15. For the reaction,

$C_2H_4(g) + 3O(2)(g) \rightarrow 2CO_2(g) + 2H_2O(I), \Delta E = -1415KJ.$

then ΔH at $27^\circ C$ is

A. $+140KJ$

B. $-1420kJ$

C. $+1420kJ$

D. $-1410kJ$

Answer: C

Watch Video Solution

16. If S° for H_2, CI_2 and HCI are 0.13 , 0.22 and 0.19 $kJK^{-1}mol^{-1}$ respectively. The total change in standard entropy for the reaction $H_2 + CI_2 \rightarrow 2HCI$ is

A. $20JK^{-1}mol^{-1}$

B. $40JK^{-1}mol^{-1}$

C. $60JK^{-1}mol^{-1}$

D. $30JK^{-1}mol^{-1}$

Answer: D

Watch Video Solution

17. The resistivity of 0.5 N solution of an electrolyte in a conductivity cell was found to be 45 ohms. The equivalent

conductance of the same solution is ... if the electrodes in the cell are 2.2 cm part and have an area of $3.8cm^2$

A. 15.75

B. 30.75

C. 33.75

D. 25.73

Answer: D

Watch Video Solution

18. Which one is an acidic salt

A. K_2SO_4

B. $NaHSO_3$

C. Na_2SO_3

D. Na_2SO_4

Answer: B

Watch Video Solution

19. In a reaction 2A product, the concentration of A decreases from 0.5 mol L-1 to 0.4 mol L-1 in 10 minutes. Calculate the rate during this interval.

A. 5 M $\min^{-1}$

B. $0.005M\ \min^{-1}$

C. $0.5M\min^{-1}$

D. $0.05M\min^{-1}$

Answer: B

Watch Video Solution

20. According to phase rule, if P = 3, C = 1, then F must be equal to

A. 1

B. 4

C. 2

D. Zero

Answer: D

Watch Video Solution

21. The values of observed and calculated molecular weights of silver nitrate are 92.64 and 170 respectively. The degree of dissociation of silver nitrate is

A. $60.23\ \%$

B. $83.5\ \%$

C. $46.7\ \%$

D. $60\ \%$

Answer: B

Watch Video Solution

22. How many mi Iii litre of $0.5NSnCl_2$ solution will reduce 600 ml of $0.1NHgCl_2$ to Hg_2Cl_2

A. 60 ml

B. 240 ml

C. 120 ml

D. 30 ml

Answer: C

Watch Video Solution

23. A solution of sodium sulphate in water is electrolyzed using inert electrodes.

The products at the cathode and anode are respectively

A. O_2, SO_2

B. O_2, H_2

C. O_2, Na

D. H_2, O_2

Answer: D

Watch Video Solution

24. Oxidation of thiosulphate $\left(S_2O_3^{2-}\right)$ ions by iodine gives

A. $S_2O_8^{2-}$

B. SO_4^{2-}

C. $S_4O_6^{2-}$

D. SO_3^{-}

Answer: C

Watch Video Solution

25. For preparing M/10 solution of H_2SO_4 in one litre we need H_2SO_4

A. 0.009 g

B. 49.0 g

C. 4.8 g

D. 9.8 g

Answer: D

Watch Video Solution

26. The highest oxidation state is shown by the element with the electronic configuration in d-orbitals

A. A) d^5

B. B) d^3

C. C) d^9

D. D) d^2

Answer: A

Watch Video Solution

27. If the energy released by burning 1 g of carbon is about 8000 cal (or approximately 3×10^{11} erg) then the amount of energy released by converting 1 g of carbon (or any other matter) completely to nuclear energy would be approximately equivalent to the energy produced by ..... g of carbon

A. 9×10^{20}

B. 10^8

C. 3×10^9

D. 10^6

Answer: C

Watch Video Solution

28. The frequency of the first line of the Lyman series in the hydrogen atom is ν. What will be the frequency of the corresponding line for the singly ionised helium atom ?

A. $v_0 / 4$

B. $4v_0$

C. $v_0 / 2$

D. $2v_0$

Answer: B

Watch Video Solution

29. The molar volume of helium is 51 .4 litre at

A. A) 100°C and 1.0 atm

B. B) 40°C and 0.5 atm.

C. C) 25°C and 0.250 atm

D. D) 300°C and 1.5 atm

Answer: B

Watch Video Solution

30. Cinnamic acid on decarboxylation gives

A. Benzaldehyde

B. Toluene

C. Styrene

D. Benzene

Answer: C

Watch Video Solution

31. Benzene reacts with CH_3COCl in the presence of $AICI_3$ to give

A. $C_6H_5COCH_3$

B. C_6H_6COCl

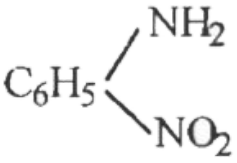
C. $C_6H_5CH_3$

D. C_6H_5Cl

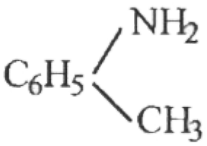
Answer: A

Watch Video Solution

32. Which will not go for diazotization

A. 

B. $C_6H_5NH_2$

C. 

D. $C_6H_6CH_2NH_2$

Answer: D

Watch Video Solution

33. Hydrolysis of HCN give

A. Formic acid

B. Acetic acid

C. Acetaldehyde

D. Formaldehyde

Answer: A

 Watch Video Solution

34. Carbonyl compounds when treated with sodium bisulphate solution then generally a crystalline sodium bisulphite addition product is formed but which of the following carbonyl compound does not forms crystalline addition product

A. $C_2H_5COC_2H_5$

B. CH_3CHO

C. CH_3COCH_3

D. $HCHO$

Answer: A

Watch Video Solution

35. Oxidation of allyl alcohol, $(CH_2 \equiv CH - CH_2OH)$ gives a mixture of oxalic acid and formic acid. If this oxidation is done in presence of bromine one would expect only

A. Acrylic acid

B. Formic acid

C. Succinic acid

D. Oxalic acid

Answer: A

Watch Video Solution

36. What mass of isobutylene is obtained from 37g of tertiary butyl alcohol heating with 20% H_2SO_4 at 363 K, if the yield is 65%

A. A) 18.2 g

B. B) 16 g

C. C) 22 g

D. D) 20 g

Answer: A

Watch Video Solution

Watch Video Solution

37. Ethylene reacts with sulphur monochloride to give

A. Ethylene chloride

B. Phosgene

C. Mustard gas

D. None of these

Answer: C

Watch Video Solution

38. Which of the following statements is false?

A. In benzene the C atoms are sp^2 hybridized

B. Meta directing groups are deactivating groups

C. Chlorination of methane follows an ionic mechanism

D. Peroxide effect is applicable only for HBr and not for the other halogen halide.

Answer: C

Watch Video Solution

39. The number of assymmetric carbon atoms in a molecule of glucose is

A. 4

B. 5

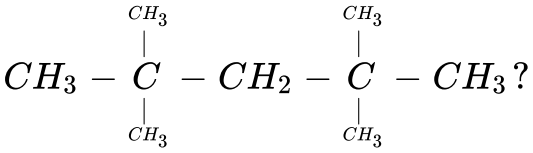
C. 3

D. 6

Answer: A

Watch Video Solution

40. How many primary carbon atoms are there in the compound,



A. 2

B. 6

C. 3

D. 4

Answer: B

Watch Video Solution

41. Wood's metal is an alloy of

A. Zn

B. Pb

C. Sn

D. Fe

Answer: B

Watch Video Solution

42. The Vander Waal's forces are the greatest in

A. Xenon

B. Argon

C. Krypton

D. Neon

Answer: A

Watch Video Solution

43. Weakest acid is

A. HOI

B. HOCI

C. HOBr

D. All have same strength

Answer: A

Watch Video Solution

44. Which of the following is least acidic

A. As_4O_{10}

B. Na_2S

C. $NaHSO_4$

D. Na_2SO_4

Answer: A

Watch Video Solution

45. A white precipitate obtained on hydrolysis of

A. $AsCI_3$

B. NCI_2

C. $BiCI_3$

D. PCI_5

Answer: C

Watch Video Solution

46. To separate CO from CO_2 the mixture is passed through

A. Ammonical Cu_2Cl_2 solution

B. Cone. H_2SO_4

C. Acidified $CuSO_4$ solution

D. NaOH solution

Answer: A

Watch Video Solution

47. A metal M of at. wt. 24 forms an oxide having 40% by wt. of O_2 .The probability formulae of oxide is

A. MO_2

B. M_2O

C. MO

D. M_2O_3

Answer: C

Watch Video Solution

48. IA group elements react violently with water and the solution becomes

A. Basic

B. Amphoteric

C. Neutral

D. Acidic

Answer: A

Watch Video Solution

49. In the electro refining process, the impure metal is made of

A. Anode

B. Cathode

C. Both

D. None

Answer: A

Watch Video Solution

50. Among the following which has higher electron affinity value

A. Iodine

B. Chlorine

C. Bromine

D. Fluorine

Answer: B

Watch Video Solution

51. A compound X gives cyanohydrin with HCN and the cyanohydrin on hydrolysis yields lactic acid. The compound X is

A. HCHO

B. C_2H_5CHO

C. CH_3CHO

D. CH_3COCH_3

Answer: C

Watch Video Solution

52. Formaldehyde reacts with ammonia to give

A. Amino methane

B. Methyl amine

C. Hexamethylene tetramine

D. Formaldehyde ammonia

Answer: C

Watch Video Solution

53. When acetone is distilled with conc. H_2SO_4 the product formed is

A. Diacetone alcohol

B. Mesityle sulphate

C. Resin

D. Mesitylene

Answer: D

Watch Video Solution

54. Which of the following will have least hindered rotation about carbon-carbon bond ?

A. I, I, 2, 2-Tetrachloroethylene

B. Acetylene

C. Ethylene

D. Hexachloroethane

Answer: D

Watch Video Solution

55. Which of the following compounds is a hydrocarbon?

A. Urea

B. Ammonium Cyanate

C. Benzene

D. Phenol

Answer: C

Watch Video Solution

56. The centric structure of benzene was proposed by

A. Dewar

B. Kekule

C. Landenberg

D. Armstrong and Baeyer

Answer: D

Watch Video Solution

57. Coal-tar is main source of

A. Aromatic compounds

B. Cycloalkanes

C. Aliphatic compounds

D. Heterocyclic compounds

Answer: A

Watch Video Solution

58. The number of σ and π-bonds in a molecule of benzene is

A. $6\sigma \text{ and } 9\pi$ bonds

B. $12\sigma \text{ and } 3\pi$ bonds

C. 9σ and 3π bonds

D. 6σ and 6π bonds

Answer: B

Watch Video Solution

59. According to Huckel 's law, which is true?

A. $(4n+2)\pi$ electrons

B. $(2n+4)\pi$ electrons

C. $(4n+4\pi)$ electrons

D. $(3n+3\pi)$ electrons

Answer: A

Watch Video Solution

60. Benzene is converted to toluene by

A. Friedal Craft's reaction

B. Wurtz reaction

C. Grignard's reaction

D. Perkin reaction

Answer: A

Watch Video Solution