CHEMISTRY

BOOKS - KCET PREVIOUS YEAR PAPERS

MODEL TEST PAPER - 8

Chemistry

1. The species that do not contain peroxide ions are

A. BaO_2

B. H_2O_2

C. SrO_2

D. PbO_2

Answer: D

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2. Chlorine acts as a bleaching agent only in presence of

A. Sun-light

B. Dry air

C. Pure oxygen

D. Moisture

Answer: D

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3. The electronic structure of four element A, B, C and D are,

A. $1s^2$, B. $1s^2 2s^2 2p^2$, C. $1s^2 2s^2 2p^5$, d. $1s^2 2s^2 2p^6$

The tendency to from electrovalent bonds are greatest in

A. A

B. C

C. B

D. D

Answer: B

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4. Which of the following represents the correct sets of the four quantum mumbers of a 4d electron?

A. $4, 2, 1, -\frac{1}{2}$

B. $4, 3, 2, +\frac{1}{2}$

C. $4, 3, -2, +\frac{1}{2}$

D. 4, 2, 1, 0

Answer: A

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5. The electronic configuration of a dispositive metal ion M^{2+} is 2, 8, 14 and its ionic weight is

56 amu. The number of neutrons in its nucleus would be

A. 32

B. 42

C. 30

D. None

Answer: A

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6. The dissociation constants of acids HA,HB,HC,HD are $2.6 \times 10^{-3}, 5.3 \times 10^{-6}, 1.1 \times 10^{-2}$ and 7.5×10^{-5} respectively. The weakest acid among these acids is

A. HD

B. HB

C. HC

D. HA

Answer: B

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7. Which is involved in digestion process

A. HBr

B. HCl

C. HI

D. HF

Answer: B

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8. When the same amount of zinc is treated separately with excess of H_2SO_4 and excess of NaOH, the ratio of volumes of H_2 evolved is

A. $1:1$

B. $2:1$

C. $9:4$

D. $1, 2$

Answer: A

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9. What is the potential of the cell containing two hydrogen electrodes as represented below

Pt,

$$\frac{1}{2}H_2(g)\left|H^+\left(10^{-8}M\right)\right|\left|H^+(0.001M)\right|1/2H^2\_(g)$$

Pt

A. $-0.0591V$

B. $0.0591V$

C. $0.295V$

D. $-0.205V$

Answer: C

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10. In the course of chemical reaction, an oxidant

A. Gains electron

B. Either of these

C. Loose electron

D. None

Answer: A

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11. Insulin contains 3.4% sulphur. The minimum molecular weight of insulin is

A. 944

B. 941.176

C. 945.27

D. None

Answer: B

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12. Assume that air is 21% oxygen and 79% nitrogen by volume if the barometric pressure is 740 mm the partial pressure of oxygen is closets to which one of the following

A. 740 mm

B. 310 mm

C. 580 mm

D. 155.4 mm

Answer: D

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13. $Be^7 \_ 4$ Captures K electrons into its nucleus. The mass no and atomic no. of new nucleus formed are

A. 7, 5

B. 7, 4

C. 6, 3

D. 7, 3

Answer: D

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14. The number of molecules of CO_2 present in 44 g of CO_2 is

A. 6×10^{23} approximately

B. 3×10^{10} approximately

C. 10^{30} approximetely

D. 12×10^{23} approximately

Answer: A

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15. Given, C graphite $+\frac{1}{2}O_2 = CO, \Delta H = -10.5$ kj

...(i)

...(ii) $CO + \frac{1}{2}O_2 = CO_2, \Delta H = 283.2$ kj

The heat of reaction of C graphite $+O_2 = CO_2$ is

A. $+172.7kJ$

B. $-393.7kJ$

C. $-172.7kJ$

D. $+393.7kJ$

Answer: B

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16. When a liquid boils, there is

A. Increase of free energy

B. Decrease in entropy

C. increase of heat of vaporization

D. increase in entropy

Answer: D

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17. The addition of the salt CH_3COONa to a solution of CH_3COOH result in a decrease of the initial

A. $[OH^-]$

B. $[CH_3COO^-]$

C. $[H^+]$

D. $[Na^+]$

Answer: C

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18. The conjugate base of CH_3O^- is

A. H_2O

B. CH_3O^-

C. O^{2-}

D. OH^-

Answer: B

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19. According to the Arrhenius equation a straight line is to be obtained by plotting the logarithm of

the rate constant of a chemical reaction (log k) against

A. log 1//T

B. T

C. $1/T$

D. log T

Answer: C

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20. Which electrolyte is least effective in causing coagulation of +ve ferric hydroxide sol

A. $K_3[Fe(CN_6)]$

B. K_2SO_4

C. K_2CrO_4

D. KBr

Answer: D

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21. Dry air was passed successively through a solution of 5 gm of solute dissolved in 80.0 gm of water and through pure water. The loss in weight of the solution was 2.5 gm and that of the pure solvent was 0.04 gm. What is the molecular weight of the solute?

A. 3.125

B. 312.5

C. 31.25

D. None

Answer: C

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22. In the following change,

$3Fe + 4H_2O = Fe_2O_4 + 4H_2$

If the atomic weight of iron is 56, then is equivalent weight will be

A. 84

B. 21

C. 63

D. 42

Answer: B

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23. The reference electrode is made up of

A. Hg_2Cl_2

B. $CuSO_4$

C. $HgCl_2$

D. $ZnCl_2$

Answer: C

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24. Oxidation number of chromium in $K_2Cr_2O_7$ is

A. -4

B. $+3$

C. $+6$

D. $+2$

Answer: C

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25. H_2O_2 solution used for hair bleaching is sold as a solution of approximately 5.0g H_2O_2 per 100mL of the solution.The molecular mass of H_2O_2 is 34. The molarity of this solution is approximately

A. 1.5

B. 3.0

C. 4.0

D. 0.15

Answer: A

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26. Which species is paramagnetic?

A. NO^+

B. CH_3^-

C. CO

D. O_2^-

Answer: D

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27. A certain nuclide has a half life period of 30 minutes.

If a sample containing 600 atoms is allowed to decay for 90 minutes, how many atoms will remain

A. 450 atoms

B. 150 atoms

C. 75 atoms

D. 200 atoms

Answer: C

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28. In the ground state of Cr atom(Z=24) ,the total number of orbitals populated by one or more electrons is,

A. 14

B. 16

C. 20

D. 15

Answer: D

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29. For a gas (R/C_v) = 0.67, the gas is made up of molecules which are

A. Polyatomic

B. Mixture of gas

C. Diatomic

D. Monatomic

Answer: D

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30. Starch is changed into disaccharides in presence of

A. Zymase

B. Maltose

C. Lactase

D. Diastase

Answer: D

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31. Phenol and benzoic acid can be distinguished by

A. Conc. H_2SO_4

B. Aqueous NaOH

C. Aqueous Na_2CO_3

D. Aqueous $NaHCO_3$

Answer: D

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32. When HCOONa is heated to 390° C, it gives

A. NaOH + CO

B. Sodium acetate

C. HCHO

D. Sodium oxalate

Answer: D

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33. Which of the following is a tribasic acid?

A. Citric acid

B. Tartaric acid

C. Malonic acid

D. Valeric acid

Answer: A

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34. Ethanol vapours are passed over heated copper at 300°C and product is treated with

aqueous NaOH.

The final product is

A. $B\eta$-hydroxil butyaldehde

B. Aldol

C. Both

D. None

Answer: C

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35. Glycerol has

A. 2 primary alcoholic group and 1 secondary alcoholic group

B. 3 secondary alcoholic groups

C. 3 primary alcoholic groups

D. 1 primary alcoholic group and 2 secondary alcoholic group

Answer: A

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36. 2-methyl-1- butene on ozonolysis forms

A. Butanone

B. Methanal

C. Both (a) and (c)

D. None

Answer: C

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37. $CH_3CH = CHCHO$ is oxidised $CH_3CH = CHCOOH$ using

A. Osmium tetra oxide

B. Ammonical silver nitrate

C. Selenium dioxide

D. Alkaline permagnate

Answer: C

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38. The percentage of nitrogen in urea is about

A. 28

B. 46.7

C. 35.8

D. 8

Answer: D

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39. Which of the folowing acids shows sterioisomerism

A. Formic acid

B. Tartaric acid

C. Acetic acid

D. Oxlic acid

Answer: D

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40. The compound which exhibits optical isomerism is :

A. $CH_3CHICH_2CH_3$

B. $CH_3CHOHCH_3$

C. $CH_3CCI_2CH_2CH_3$

D. $(CH_3)_2CHCH_2CH_3$

Answer: C

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41. Acids nature of Zn $(OH)_2$ is shown during its reaction with

A. H_2SO_4

B. HCl

C. NaOH

D. None

Answer: C

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42. XeF_2 has ... struture

A. Triangular

B. Tetrahedral

C. Linear

D. Planar

Answer: C

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43. When excess of KI is added to copper sulphate solution

A. No reaction takes place

B. Potassium iodide is oxidized

C. Copper sulphate is oxidised

D. Cuprous iodide is formed

Answer: B

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44. Which is most basic of the following oxides

A. Al_2O_3

B. P_2O_5

C. SiO_2

D. Na_2O

Answer: D

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45. Dinitrogen tetroxide, N_2O_4 is a mixed anhydride because it

A. React with water to form two acids

B. Decomposes into two oxides of nitrogen

C. Reacts with water to form nitric acid

D. Is a mixture of N_2O_3 and N_2O_5

Answer: A

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46. Glass is soluble in

A. H_2SO_4

B. Aqua-regia

C. $HCIO_4$

D. HF

Answer: D

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47. Magnesium burns in CO_2 to form

A. $MgCO_2$

B. $MgCO_3$

C. MgO and C

D. MgO an CO

Answer: C

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48. When KCl is heated with conc. H_2SO_4 and solid $K_2Cr_2O_7$, we get

A. Chromic oxide

B. Chomous chloride

C. Chromyl chloride

D. Chloride

Answer: C

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49. Chalcogens are

A. Oxide forming element

B. Ore forming element

C. Those having ability to catenate

D. Hydrocarbons

Answer: B

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50. The ionization of hydrogen atom would give rise to

A. Hydroxyl ion

B. Hydronium ion

C. Proton

D. Hydride ion

Answer: C

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51. Ethyl bromide on heating with alcoholic KOH solution gives

A. C_2H_5OH

B. C_2H_6

C. $C_2H_5OC_2H_5$

D. C_2H_4

Answer: D

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52. Alcoholic solution of KOH is used for

A. Dehydrogenation

B. Dehydration

C. Dehalogenation

D. Dehydrohalogenation

Answer: D

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53. Sodium ethoxide (C_2H_5ONa) is a specific reagent for

A. Dehydration

B. Dehydrohalogenation

C. Dehydrogenation

D. Dehalogenation

Answer: C

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54. Electrolysis of cold conc. Aqueous solution of potassium succinate yields

A. Ethane

B. Ethene

C. Ethyne

D. Ethane-1-2-diol

Answer: B

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55. Dehydration of ethanol yields

A. Acetic acid

B. Ethylene

C. Ethane

D. Acetylene

Answer: B

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56. Ethylene readily undergoes

A. Addition reaction

B. Eilimination reaction

C. Substitution reaction

D. Rearrangement reaction

Answer: A

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57. The reaction of HBr with ethylene is an example of

A. Substitution reaction

B. Polymerisation

C. Condensation reaction

D. Addition reaction

Answer: D

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58. The compound that decolourises alk. $KMnO_4$ is

A. C_3H_8

B. CH_4

C. C_2H_4

D. CCI_4

Answer: C

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59. Isonitriles on reduction give

A. 1° amine

B. 3° amine

C. 2° amine

D. Quarternary ammonium salts

Answer: C

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60. When benzene diazonium chloride undergoes hydrolysis, it gives

A. Chlorobenzene

B. Benzyl alcohol

C. Phenol

D. Benzene

Answer: C

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