doubtnut
India's Number 1 Education App

CHEMISTRY

BOOKS - KCET PREVIOUS YEAR PAPERS

CHEMISTRY

Mcqs

1. Solute 'X' dimerises in water to the extent of 80 % 2.5 g of 'X' in 100 g of water increases the

boiling point by 0.3 $.^{\circ} C$. The molar mass of 'X' is $\left[K_{b=0.52 \ \mathrm{K\ gmol^{-1}}}\right]$

A. 65

B. 26

C. 13

D. 52

Answer:

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2. Given $E^{\circ}_{Fe^{+3}/Fe^{+2}} = +0.76V$ and $E^{\circ}_{l_2/l^-} = +0.55V$. The equilibrium constant galvanic cell consisting of above two electrodes is $\left[\frac{2.303RT}{F} = 0.06\right]$

A. 3×10^6

B. 5×10^{12}

C. 1×10^7

D. 1×10^9

Answer:

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3. If an aqueous solution of NaF is electrolyzed between inert electrodes , the product obtained at anode is

A. Na

B. O_2

C. F_2

D. H_2

Answer:

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4. In which of the following cases a chemical reaction is possible ?

A. Conc. HNO_3 is stored in a platinum vessel .

B. gold ornaments are washed with dil HCl

C. $ZnSO_{4(aq)}$ is placed in copper vessel

D. $AgNO_3$ solution is stirred with a copper spoon .

Answer:

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5. The time required for 60 % completion of a first order reaction is 50 min . The time required for 93.6 % completion of the same reaction will be

A. 50 min

B. 150 min

C. 100 min

D. 83.8 min

Answer:

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6. For an elementry reaction $2A + 3B \rightarrow 4C + D$ the rate of appearance of C at time is 2.8×10^{-3} mol $L^{-1}S^{-1}$. Rate of disappearance of B at 't' , will be

A. $2\left(2.8 \times 10^{-3} molL^{-1}S^{-1}\right)$

B. $\frac{1}{4}\left(2.8 \times 10^{-3}\right) mol L^{-1} S^{-1}$

C. $\frac{4}{3}\left(2.8 \times 10^{-3}\right) mol L^{-1} S^{-1}$

D. $\frac{3}{4}\left(2.8 \times 10^{-3}\right) mol L^{-1} S^{-1}$

Answer:

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7. The rate constant of a reaction is given by k = $Pze^{-Ea/RT}$ under standard notation . In order to speed up the reaction , which of the following factors has to be decreased ?

A. E_a

B. T

C. Z

D. Both Z and T

Answer:

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8. A sol of AgI is prepared by mixing equal volumes of 0.01 M $AgNO_3$ and 0.2 M KI , which of the following statement is correct ?

A. Sol obtained is a positive sol with K^+ adsorbed on AgI .

B. Sol obtained is a negative sol with I^- adsorbed on AgI .

C. Sol obtained is a negative sol with NO_3^- adsorbed on AgI .

D. Sol obtained is a positive sol with Ag^+ adsorbed on AgI .

Answer:

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9. During Adsorption of a gas on a solid

A. $\Delta G < 0, \Delta H < 0, \Delta S > 0$

B. $\Delta G > 0, \Delta H > 0, \Delta S > 0$

C. $\Delta G < 0, \Delta H < 0, \Delta S < 0$

D. $\Delta G > 0, \Delta H > 0, \Delta S > 0$

Answer:

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10. Copper is extracted from copper pyrites by

A. Electrometallurgy

B. Auto reduction

C. Thermal decomposition

D. Reduction by coke

Answer:

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11. Function of potassium ethylxanthate in froth floatation process is to make the ore

A. hydrophilic

B. heavier

C. lighter

D. hydrophobic

Answer:

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12. Sulphide ore on roasting gives a gas X. X reacts with Cl_2 in the presence of activated charcoal to give Y . Y is :

A. SCl_6

B. $SOCl_2$

C. SO_2Cl_2

D. S_2Cl_2

Answer:

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13. Aqueous solution of a salt (A) forms a dense white precipitate with $BaCl_2$ solution . The precipitate dissolves in dilute HCl to produce a gas (B) which decolourises acidified $KMnO_4$ solution . A and B respectively are :

A. $BaSO_3, H_2S$

B. $BaSO_4, SO_2$

C. $BaSO_3, SO_2$

D. $BaSO_4, H_2S$

Answer:

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14. Bond angle in PH4+ is higher that in PH_3. Why?

A. PH_3 has planar trigonal structure

B. hybridisation of P changes when PH_3 is converted to PH_4^+

C. lonepair - bond pair repulsion exists in PH_3

D. PH_4^+ has square planar structure

Answer:

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15. Incorrectly matched pair is :

A. XeF_6 - distorted octahedral

B. $XeOF_4$ - square pyramidal

C. XeO_3 - pyramidal

D. XeF_4 - tetrahedral

Answer:

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16. Phosphorus pentachloride

A. has all the five equivalent bonds

B. exists as an ionic solid in which cation has octahedral structure and anion has tetrahedral structure

C. on hydrolysis gives an oxo acid of phosphorus which is tribasic

D. on hydrolysis gives an oxo acid of phosphorus which is a good reducing agent .

Answer:

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17. Identify the set of paramagnetic ions among the following :

A. $Ti^{3+}, Cu^{2+}, Mn^{3+}$

B. Se^{3+}, Ti^{3+}, V^{3+}

C. V^{2+}, Co^{2+}, Ti^{4+}

D. $Ni^{2+}, Cu^{2+}, Zn^{2+}$

Answer:

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18. How many moles of acidified $K_2Cr_2O_7$ is required to liberate 6 moles of I_2 from an aqueous solution of I^- ?

A. 0.25

B. 0.5

C. 2

D. 1

Answer:

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19. Cu_2Cl_2 and $CuCl_2$ in aqueous mdeium

A. Both are unstable

B. Cu_2Cl_2 is more stable than $CuCl_2$

C. $CuCl_2$ is more stable than Cu_2Cl_2

D. Stability of Cu_2Cl_2 is equal to stability of $CuCl_2$

Answer:

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20. The co - ordination number of Fe and Co in the complex ions ,

$\left[Fe(C_2O_4)_3\right]^{3-}$ and $\left[Co(SCN)_4\right]^{2-}$ are respectively :

A. 4 and 6

B. 6 and 4

C. 3 and 4

D. 6 and 8

Answer:

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21. Number of stereoisomers exhibited by $[Co(en)_2Cl_2]^+$ is

A. 5

B. 3

C. 4

D. 2

Answer:

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22. Give the IUPAC name of $\left[Pt(NH_3)_4\right]\left[PtCl_4\right]$ is

A. tetra ammine platinate (o) tetra chlorido platinum (IV)

B. tetra ammine platinum (II) tetra chlorido platinate (II)

C. tetra ammine platinum (o) tetra chlorido platinum (IV)

D. tetra ammine platinate (II) tetra chlorido platinum (II)

Answer:

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23. Prolonged exposure of chloroform in humans may cause damage to liver . It is due to the formation of the following compound :

A. CH_2Cl_2

B. Cl_2

C. CCl_4

D. $COCl_2$

Answer:

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24. Which of the following halide shows highest reactivity towards S_N1 reaction ?

A. $CH_3 - CH_2 - CH_2 - CH_2Cl$

B. C_6H_5Cl

C. $C_6H_5CH_2Cl$

D. $CH_3 - CH_2Cl$

Answer:

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25. In the reaction

The number of possible isomers for the organic compound X is

A. 3

B. 2

C. 4

D. 5

Answer:

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26. Which of the following on heating gives an ether as major product ?

$P: C_6H_5CH_2Br + CH_3ONa$

$Q: C_6H_5ONa + CH_3Br$

$R: (CH_3)_3C - Cl + CH_3ONa$

$S: C_6H_5CH = CHCl + CH_3ONa$

A. Both Q and S

B. Both P and Q

C. Both R and S

D. Both P and R

Answer:

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27. The steps involved in the conversion of propan - 2- ol to propan - 1 - ol are in the order

A. heating with PCl_5 heating with alc . KOH, hydroboration oxidation

B. dehydration , addition of HBr in presence of peroxide , heating with alc . KOH

C. dehydration , addition of HBr , heating with aq. KOH

D. heating with PCl_5 heating with alc . KOH

. Acid catalysed addition of water

Answer:

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28. Which of the following is the strongest base ?

A. OH^-

B. CH_3O^-

C. CH_3COO^-

D. Cl^-

Answer:

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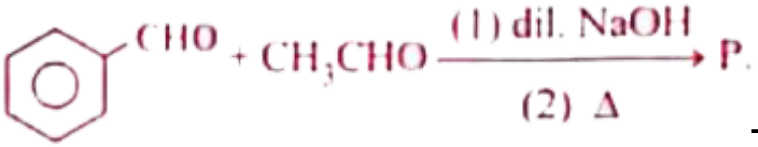
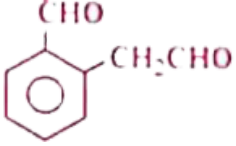
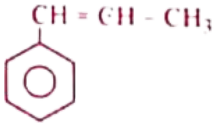
29. 

The product 'P' is

A.

B. 

C.

D. 

Answer:

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30. Which of the following has the lowest boiling point ?

A. $CH_3 - O - CH_3$

B. HCOOH

C. CH_3CH_2OH

D. $CH_3 - CH_2 - NH_2$

Answer:

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31. The carbonyl compound that does not undergo aldol condensation is

A. trichloroacetaldehyde

B. acetaldehyde

C. acetone

D. dichloroacetaldehyde

Answer:

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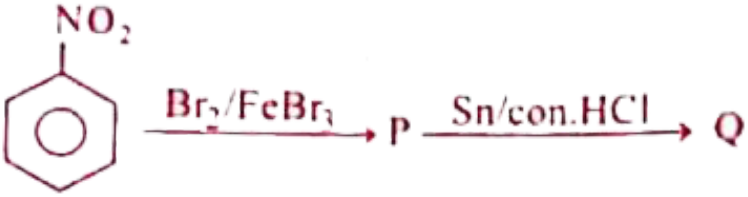
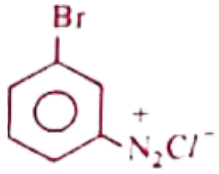


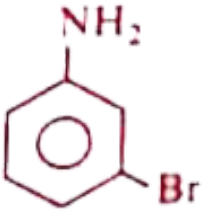
32.

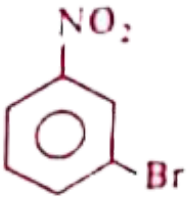
$$\xrightarrow{Br_2 / FeBr_3} P \xrightarrow{\text{Sn/con.HCl}} Q$$

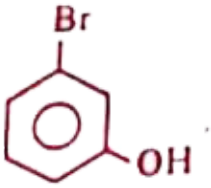
$$\text{(i) } NaNO_2, 273K \xrightarrow[\text{(ii) water, warm}]{\overset{+}{\text{dil. Hcl}}} R$$

The final product R is

A. 

B. 

C. 

D. 

Answer:

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33. Hinsberg's reagent is

A. $C_6H_5SO_2NH_2$

B. CH_3COCl / pyridine

C. $(CH_3CO)_2$ / pyridine

D. $C_6H_5SO_2Cl$

Answer:

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34. Which one of the following vitamins is not stored in adipose tissue ?

A. D

B. E

C. A

D. B_6

Answer:

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35. Hypothyroidism is caused by the deficiency of

A. Thyroxine

B. Glucocorticoid

C. Vitamin $B-12$

D. Adrenalin

Answer:

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36. C_1-C_4 glycosidic bond is NOT found in

A. lactose

B. starch

C. maltose

D. sucrose

Answer:

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37. Which of the following polymer has strongest intermolecular forces of attraction ?

A. Polythene

B. Polystyrene

C. Neoprene

D. Terylene

Answer:

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38. Which of the following monomers can undergo condensation polymerization ?

A. Isoprene

B. Propene

C. Styrene

D. Glycine

Answer:

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39. A food additive that acts as an anti-oxidant is

A. Sugar syrup

B. Salt

C. BHA

D. Saccharin

Answer:

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40. Which of the following is not related to drug-enzyme interaction ?

A. co-enzymes

B. enzyme inhibitor

C. allosteric site

D. antagonist

Answer:

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41. 0.4g of dihydrogen is made to react with 7.1g of dichlorine to form hydrogen chloride. The volume of hydrogen chloride formed at 273 K and 1 bar pressure is

A. 90.8 L

B. 45.4 L

C. 9.08 L

D. 4.54 L

Answer:

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42. With regard to photoelectric effect, identify the $\underline{\text{CORRECT}}$ statement among the following :

A. Number of e^- ejected increases with the increase in work function.

B. Number of e^- ejected increases with the increase in the intensity of incident light.

C. Energy of e^- ejected increases with the increase in the intensity of incident light.

D. Number of e^- ejected increases with the increase in the frequency of incident light.

Answer:

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43. The last element of the P - block in 6^{th} period is represented by the outer most electronic configuration :

A. $4f^{14}5d^{10}6s^26p^4$

B. $4f^{14}5d^{10}6s^26p^6$

C. $7s^27p^6$

D. $5f^{14}6d^{10}7s^27p^6$

Answer:

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44. The conjugate base of NH_3 is

A. NH_2OH

B. NH_2^-

C. NH_4^+

D. NH_4OH

Answer:

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45. A gas mixture contains 25% He and 75% CH_4 by volume at a given temperature and pressure. The percentage by mass of methane in the mixture is approximately _____ .

A. 0.92

B. 0.08

C. 0.75

D. 0.25

Answer:

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46. The percentage of s-character in the hybrid orbitals of nitrogen in NO_2^+, NO_3^- and NH_4^+ respectively are :

A. 50%, 33.3%, 25%

B. 25%, 50%, 33.3%

C. 33.3%, 50%, 25%

D. 33.3%, 25%, 50%

Answer:

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47. The formal charge on central oxygen atom in ozone is

A. $+2$

B. $+1$

C. -1

D. 0

Answer:

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48. When the same quantity of heat is absorbed by a system at teo different temperatures T_1 and T_2, suchd that $T_1 > T_2$, change in entropies are ΔS_1 and ΔS_2 respectively . Then :

A. $S_2 > S_1$

B. $\Delta S_2 < \Delta S_1$

C. $\Delta S_1 < \Delta S_2$

D. $\Delta S_1 = \Delta S_2$

Answer:

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49. The oxidation number of nitrogen atoms in NH_4NO_3 are

A. $+3, \ -5$

B. $-3, \ -3$

C. $+5, \ +5$

D. $-3, \ +5$

Answer:

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50. A Lewis acid 'X' formed by the reaction of BF_3 with $LiAlH_4$ in ether medium to gives a highly toxic gas. This gas when heated with NH_3 gives a compound commonly known as inorganic benzene. The gas is

A. $B_3N_3H_6$

B. BF_3

C. B_2O_3

D. B_2H_6

Answer:

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51. The oxide of potassium that does not exist is

A. K_2O_2

B. K_2O_3

C. K_2O

D. KO_2

Answer:

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52. The metal that produces H_2 with both dil HCl and NaOH(aq) is

A. Ca

B. Fe

C. Zn

D. Mg

Answer:

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53. Which of the following is NOT a pair of functional isomers ?

A. $CH_3CH_2NO_2$ and H_2NCH_2COOH

B. CH_3COOH and $HCOOCH_3$

C. C_2H_5COOH and $HCOOCH_3$

D. CH_3CH_2OH and CH_3OCH_3

Answer:

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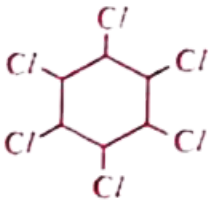
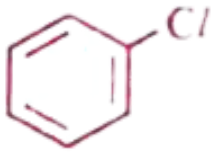
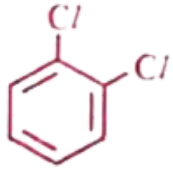
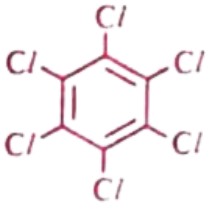
54. Identify 'X' in the following reaction

$$C_6H_6 + \underset{(\text{excess})}{6Cl_2} \xrightarrow[\text{dark, cold}]{\text{Anhydrous } AlCl_3} X + 6HCl$$

A. 

B. 

C. 

D. 

Answer:

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55. Which of the following is NOT a green house gas ?

A. O_2

B. NO_2

C. CFC

D. CO_2

Answer:

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56. Experimentally it was found that a metal oxide has formula $M_{0.98}O$ .Metal M, is present as M^{2+} and M^{3+} in its oxide. Fraction of the metal which exists as M^{3+} would be :

A. 5%

B. 9.6%

C. 8.3%

D. 4.6%

Answer:

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57. A metal crystallises in face centred cubic structure with metallic radius $\sqrt{2}A^{\circ}$. The volume of the unit cell (in m^3) is

A. 4×10^{-9}

B. 6.4×10^{-30}

C. 4×10^{-10}

D. 6.4×10^{-29}

Answer:

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58. Silicon doped with gallium forms

A. an intrinsic semiconductor

B. p - type semiconductor

C. n - type semiconductor

D. both n and p type semiconductor

Answer:

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59. The pair of electrolytes that possess same value for the constant (A) in the Debye - Huckel - Onsagar equation,

$\lambda_m = \lambda_m^\circ - A\sqrt{C}$ is

A. NaBr, $MgSO_4$

B. NaCl, $CaCl_2$

C. $MgSO_4$, Na_2SO_4

D. NH_4Cl, NaBr

Answer:

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60. Which of the following pair of solutions is isotonic ?

A. 0.001 M $CaCl_2$ and 0.001 M $Al_2(SO_4)_3$

B. 0.01 M $BaCl_2$ and 0.001 M $CaCl_2$

C. 0.01 M $BaCl_2$ and 0.015 M NaCl

D. 0.001 M $Al_2(SO_4)_3$ and 0.01 M $BaCl_2$

Answer:

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