

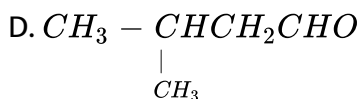
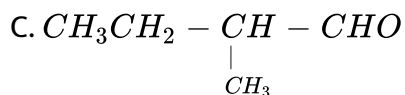
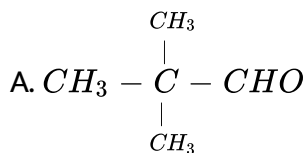
## CHEMISTRY

### BOOKS - KCET PREVIOUS YEAR PAPERS

### MODEL TEST PAPER 6

#### Chemistry

1. Which compounds would undergo Cannizaro's reaction?



**Answer: A**



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**2. HBr reacts fastest with**

A. 2-methylpropan-1-ol

B. Propan-1-ol

C. Propan-2-ol

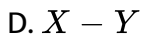
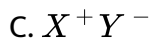
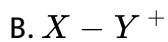
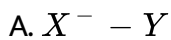
D. 2-methylpropan-2-ol

**Answer: D**



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**3. Element X is strongly electropositive and element Y is strongly electronegative. Both are univalent. The compound formed would be**



**Answer: C**

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4. Which of the following species would be expected as paramagnetic ions



D. Copper crystal

**Answer: B**

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5. Vapour density of a gas is 11.2. The volume occupied by 11.2 g of gas at NTP is

A. 22.4 litre

B. 1 litre

C. 11.2 litre

D. None

**Answer: C**

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6. Heat of neutralization of the reaction,  $\text{NaOH} + \text{HCl} \rightarrow \text{NaCl} + \text{H}_2\text{O}$  is  $57.2\text{kJ mol}^{-1}$ . What will be the heat released when 0.25 mole of NaOH is titrated against 0.25 mole of HCl

A. 28.6 kJ

B. 57.1 kJ

C. 14.3 kJ

D. 22.5 kJ

**Answer: C**

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7. Aqueous solution of  $CuSO_4 \cdot 5H_2O$  changes blue litmus paper red due to

A. Hydrolysis of  $Cu^{2+}$  ion

B. Reduction taking place

C. Presence of  $Cu^{2+}$  ions

D. Presence of  $SO_4^{2-}$  ions

**Answer: A**

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8. If the half-cell reaction  $A + e \rightarrow A^-$  has a large negative reduction potential, it follows that

A.  $A^-$  is readily oxidized

B. A is readily oxidised

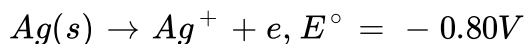
C.  $A^-$  is readily reduced

D. A is readily reduced

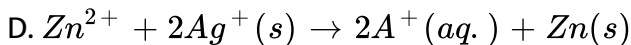
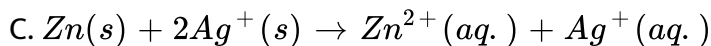
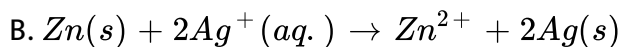
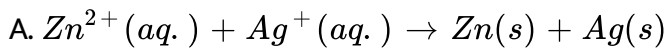
**Answer: A**

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9. The standard oxidation potentials of Zn and Ag in water at  $25^\circ C$  are



Which reaction actually takes place ?



**Answer: B**

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**10.** Oxidation number of Cl in  $NOClO_4$  is

A. -5

B. -7

C. +5

D. +7

**Answer: D**

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11. 12 g of  $H_2SO_4$  are dissolved in water to make 1200 ml of solution. The normality of the solution is

- A. 1
- B. 0.2
- C. 0.1
- D. 2

**Answer: B**



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12. In alkene structure, three carbon atoms are joined by

- A. Three  $\pi$ - bonds only
- B. Three  $\sigma$ - and three  $\pi$  bonds
- C. Two  $\sigma$  and two  $\pi$ - bonds



D. Two  $\sigma$ - and one  $\pi$ -bonds

**Answer: C**



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13. When an electron jumps from L to K shell

- A. Energy is released
- B. Energy is absorbed
- C. Both (a) & (b)
- D. None of these

**Answer: A**



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14. The relative rates of diffusion of  $U^{235}F_6$  and  $U^{238}F_6$  are

A. 1.6

B. 1.2

C. 1.4

D. 1.0043

**Answer: D**



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15. Heat of reaction for,  $CO(g) + \frac{1}{2}O_2(g) \rightarrow CO_2(g)$  at constant V is  $-67.71$  kcal at  $17^\circ C$ . The heat of reaction at constant P at  $17^\circ C$

A.  $+68.0$  kcal

B.  $-67.42$  kcal

C.  $-68.0$  kcal

D. None

**Answer: C**

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16. When 1g atom of carbon is converted into 1 g molecule of  $CO_2$ , the heat liberated is same?

- A. A) Whether the carbon is in the form of diamond or graphite
- B. B) Irrespective of whether the volume is kept constant or pressure is kept constant
- C. C) Irrespective of the temperature at which the reaction is carried out
- D. D) None of the above

**Answer: B**

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17. The pH of water is 7 at  $25^{\circ}\text{C}$ . If water is heated to  $50^{\circ}\text{C}$ , which of the following should be true?

- A. pH will remain seven pH will increase
- B. pH will increase
- C. pH will decrease
- D.  $[\text{H}^+]$  will increase but  $[\text{OH}^-]$  will decrease

**Answer: C**



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18. For a reaction  $2A + B \rightleftharpoons C + D$ , the partial pressures of A, B, C and D at equilibrium are 0.5, 0.8, 0.7 and 1.2 atmospheres respectively. The value of  $K_p$  for this reaction is

- A. 0.24
- B. 2.4

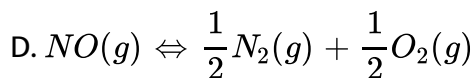
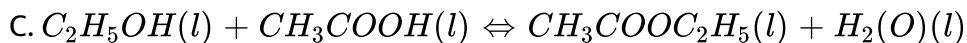
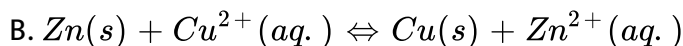
C. 0.42

D. 4.2

**Answer: D**

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19. For a which reaction does the equilibrium constant depend on the units of concentration?



**Answer: A**

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20. The catalyst used for preparing toluene with a mixture of  $C_6H_6$  and  $CH_3Cl$  is

A. Anhydrous  $AlCl_3$

B. Pd

C. Pt

D. Ni

**Answer: A**



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21. If Raoult's law is obeyed, the vapour pressure of the solvent in a solution is directly proportional to

A. The volume of the solution

B. Mole fraction of the solute

C. Mole fraction of the solvent and solute

D. Mole fraction of the solvent

**Answer: D**

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22. 23g of sodium reacts with ethyl alcohol to give

A. 12 mole of NaOH

B. 1 mole of  $H_2$

C.  $1/2$  mole of  $H_2$

D. 1 mole of  $O_2$

**Answer: C**

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23. The ratio of weights of hydrogen and magnesium deposited by the same amount of electricity from  $H_2SO_4$  and  $MgSO_4$  in aqueous solution are

A. 1:12

B. 1:8

C. 1:16

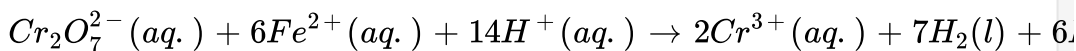
D. None of the above

**Answer: D**



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24. In the reaction between acidified  $K_2Cr_2O_7$  and Iron (II) ions shown by the equation



A. The dichromate ions are reduced



- B. The colour of the solution changes from green to yellow
- C. Hydrogen ions are reduced
- D. The ion (II) ions are reduced.

**Answer: A**

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**25.** What volume of 0.8 M solution contains 0.1 mole of solute

- A. 500 ml
- B. 125 ml
- C. 0.125 ml
- D. 100 ml

**Answer: C**

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26. The atomic orbital not allowed in quantum theory is

A. 2p

B. 2s

C. 3f

D. 1s

**Answer: C**



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27. The  $\beta$ -decay of  ${}_{11}^{24}\text{Na}$  produces in isotope of

A. Al

B. Na

C. Mg

D. Ne

**Answer: C**

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**28.** Minimum number of photons of light of wavelength  $4000 \text{ \AA}$  which provide 1 J energy

A.  $2 \times 10^{10}$

B.  $2 \times 10^9$

C.  $2 \times 10^{20}$

D.  $2 \times 10^{18}$

**Answer: D**

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**29.** In the Haber process metallic oxides catalyse reaction between gaseous nitrogen and hydrogen to yield ammonia whose volume (STP)

relative to the total volume of reactants (STP) should be

A. Three-fourth

B. Half

C. The same

D. One-fourth

**Answer: B**



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**30.** Which will weigh more at STP

A. One litre of  $Cl_2$

B. One litre of  $H_2$

C. One litre of  $N_2$

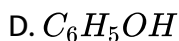
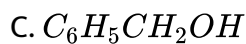
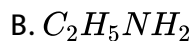
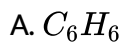
D. One litre of  $O_2$

**Answer: A**



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31. Which does not burn with sooty flame



Answer: C



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32. Which of the following will give a primary amine on hydrolysis

A. Alkyl isocyanide

B. Alkyl cyanide

C. Oxime

D. Nitroparaffin

**Answer: A**



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**33.** The amide contains

A. Dative bond

B. Sigma bond only

C. Sigma bond and a  $\pi$ -bond

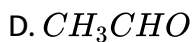
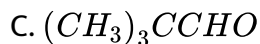
D.  $2\pi$ -bonds and sigma bond

**Answer: C**



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34. Which one of the following aldehydes will not form an aldol when treated with dilute NaOH

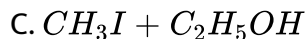
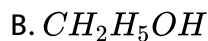
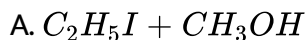


Answer: C



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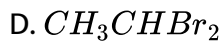
35. The reaction of  $CH_3OC_2H_5$  with HI gives



Answer: C

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36. Which one a gem-dihalide?

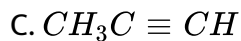
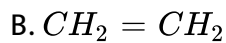
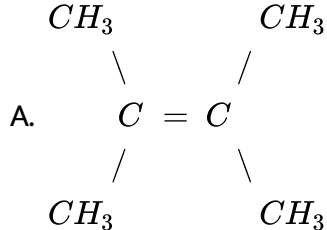


Answer: D

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37. Which of the following does not decolourize  $Br_2$  water





**Answer: A**

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**38.** When propyne is treated with aqueous  $\text{H}_2\text{SO}_4$  in presence of  $\text{HgSO}_4$ , the major product is

A. Acetone

B. Propyl hydrogen sulphate

C. Propanal

D. Propenal

**Answer: A**

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**39.** Formation of distributed derivatives from mono substituted benzene results the following number of isomers

- A. One
- B. Three
- C. Two
- D. Four

**Answer: B**

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**40.** On passing  $CrO_2Cl_2$  through NaOH and then adding  $(CH_3COO)_2Pb$ , the ppt. formed is

A.  $PbCl_2$

B.  $CrCl_3$

C.  $PbCrO_4$

D. None of the above

**Answer: C**

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**41.** AgCl on fusion with  $Na_2CO_3$  gives

A.  $Ag_2CO_3$

B. Ag

C.  $Ag_2O$

D. Ag carbide

**Answer: B**

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42.  $ClO_2$  is an anhydride of

- A. Chlorine acid ( $HClO_3$ )
- B. Mixed anhydride of  $HClO_2$  and  $HClO_3$
- C. Chlorous acid ( $HClO_2$ )
- D. None of the above

**Answer: B**



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43. Ozone oxidises moist sulphur to

- A.  $H_2SO_4$
- B.  $SO_2$
- C.  $SO_3$

D. None of the above

**Answer: A**

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44. A compound which leaves behind no residue on heating is

A.  $KNO_3$

B.  $Cu(NO_3)_2$

C.  $NH_4NO_3$

D. None of the above

**Answer: C**

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45. Least stable hydride is

A. Stibine

B. Pumbane

C. Silane

D. Methane

**Answer: B**

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**46.** A particular element belongs to group 13 and II period of the periodic table. It is

A. Solid, less metallic

B. Liquid, metallic

C. Solid, non-metallic

D. Gas, slightly metallic

**Answer: A**

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47. Which is the salt of an organic acid

A. Gluber's salt

B. Microcosmic salt

C. Mohr's salt

D. Rochelle salt

**Answer: D**

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48. Hydrogen is evolved by the action of cold dilute  $HNO_3$  on

A. Al

B. Mg

C. Cu

D. Fe

**Answer: B**



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**49.** Cassiterite is an one of

A. Mn

B. Ni

C. Sb

D. Sn

**Answer: B**



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**50.** In a given period, the alkali metals have:



A. Highest electronegativity

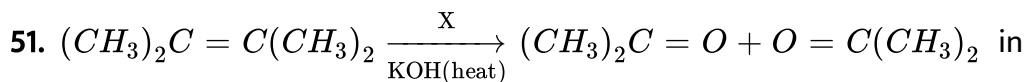
B. Largest atomic radii

C. Highest density

D. Highest ionisation

**Answer: B**

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the above reaction 'X' is

A.  $HNO_3$

B.  $O_3$

C.  $O_2$

D.  $KMnO_4$

**Answer: D**



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52. Baeyer's reagent is

- A. Alkaline  $KMnO_4$  solution
- B. Neutral  $KMnO_4$  solution
- C. Acidified  $KMnO_4$  solution
- D. Aqueous bromine solution

Answer: A



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53. Ethylene reacts with alkaline  $KMnO_4$  to form

- A. Oxalic acid
- B. Ethyl alcohol
- C. HCHO

D. Glycol

**Answer: D**



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**54.** The product of addition polymerisation reaction is

A. PVC

B. Terylene

C. Nylon

D. Polyamide

**Answer: A**



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**55.** Polythene is a resin obtained by polymerisation of

A. Butadiene

B. Ethylene

C. Isoprene

D. Styrene

**Answer: C**

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56. Dilute aqueous  $KMnO_4$  at room temperature reacts with  $R - CH = CH - R$  to give

A.  $R - CHO$

B.  $RCHOH - CHOHR$

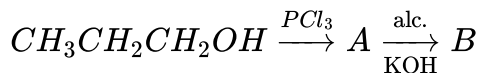
C.  $R - COOH$

D.  $(CO_2 + H_2O)$

**Answer: B**

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57. The compounds A and B are formed in the sequence of the reaction



In the above reaction B is

- A. Propylene
- B. Propane
- C. Propyne
- D. Propanol

**Answer: A**

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58. The product of formed when benzaldehyde is refluxed with alcoholic KCN solution is

- A. Phenyl cyanide
- B. Benzoin
- C. Phenyl isocyanide
- D. Phenyl isocyanate

**Answer: B**

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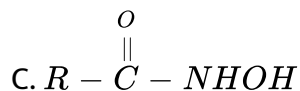
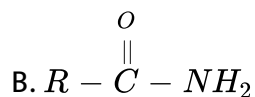
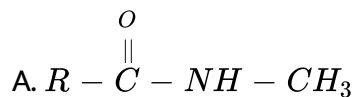
**59.** The action of nitrous acid on ethyl amine gives

- A. Nitroethane
- B. Ethyl nitrite
- C. Ethane
- D. Ethyl alcohol

**Answer: D**

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60. Which of the following nitrogen compounds would undergo Hofmann's reaction (i.e. reaction with  $Br_2$  and KOH) to give a primary amine?



D. none of these.

**Answer: B**



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