



# CHEMISTRY

## BOOKS - KCET PREVIOUS YEAR PAPERS

### KARNATAKA CET 2001

#### Chemistry

1. To get DDT chlorobenzene has to react with the following compound in the presence of concentrated sulphuric acid

A. dichloro acetaldehyde

B. trichloro acetaldehyde

C. trichloro ethane

D. dichloro acetone

**Answer: B**



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2. Alcoholic potash is used to bring about

A. dehydrohalogenation

B. dehalogenation

C. dehydrogenation

D. dehydration

**Answer: A**



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**3.** Propanone is the product obtained by dehydrogenation of

A. propanal

B. n-propyl alcohol

C. 2-propanol

D. 1-propanol

**Answer: C**



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4. Phenol is treated with bromine water and shaken well. The white precipitate formed during the process is

- A. 2,4 dibromophenol
- B. a mixture of o-and p-bromo phenol
- C. m-bromophenol
- D. 2,4,6 tribromo phenol

**Answer: D**



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5. Which of the following organic compounds answers both Iodoform test and Fehlings test

A. propanone

B. ethanal

C. methanal

D. ethanol

**Answer: B**



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6. The quantify of electricity required to liberate  $112\text{cm}^3$  of hydrogen at STP from acidified water is

A. 0.1 Faraday

B. 06500 Coulombs

C. 965 Coulombs

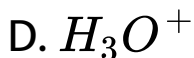
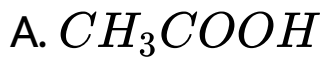
D. 1 Faraday

**Answer: C**



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7. Which one of the following can be classified as Bronsted base?



**Answer: C**



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8. Hydrogen ion concentration of an aqueous solution is  $1 \times 10^{-4} M$ . The solution is diluted with equal volume of water. Hydroxyl ion



concentration of the resultant solution in terms of  $\text{mol dm}^{-3}$  is

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

B.  $0.5 \times 10^{-10}$

C.  $1 \times 10^{-8}$

D.  $1 \times 10^{-6}$

**Answer: A**



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9. pKa values of two acids A and B are 4 and 5.

The strengths of these two acids are related as

A. the strengths of the two acid cannot be compared

B. acid B is 10 times stronger than acid A

C. acid A is 10 times stronger than acid B

D. strength of acid A: strength of acid

$$B = 4:5$$

**Answer: C**



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**10.** pH of a solution produced when an aqueous solution of pH 6 is mixed with an equal volume of an aqueous solution of pH 3 is about

A. 4.0

B. 4.5

C. 3.3

D. 4.3

**Answer: C**



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**11. IUPAC name of  $K_3[Fe(CN)_6]$  is**

A. potassium hexacyanoferrate (III)

B. potassium hexacyano ferrate (II)

C. potassium ferricyanic

D. hexacyano ferrate (III)

**Answer: A**



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**12.** The shape of cuprammonium ion is

- A. octahedral
- B. square planar
- C. trigonal
- D. tetrahedral

**Answer: B**



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13. When a mixture of calcium acetate and calcium formate is dry distilled, the product formed is

A. methanal

B. acetophenone

C. ethanal

D. butanone

**Answer: C**



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14. The test used for identifying peptide linkage in protein is

A. Ninhydrin test

B. Biuret test

C. Borsche's test

D. Molisch's test

**Answer: B**



15. Which of the following compounds on boiling with alkaline  $KMnO_4$  and subsequent acidification will not give Benzoic acid?

A. anisole

B. toluene

C. benzyl alcohol

D. acetophenone

**Answer: A**





16. 5 moles of  $SO_2$  and 5 moles of  $O_2$  are allowed to react to form  $SO_3$  in a closed vessel. At the equilibrium stage 60% of  $SO_2$  is used up. The total number of moles of  $SO_2$ ,  $O_2$  and  $SO_3$  in the vessel now is

A. 10.5

B. 3.9

C. 10.0

D. 8.5

**Answer: D**



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17. A quantity of  $PCl_5$  was heated in a  $10 \text{ dm}^3$  vessel at  $250^\circ \text{C}$



equilibrium the vessel contains 0.1 mole of  $PCl_5$ , 0.2 moles of  $PCl_3$  and 0.2 moles of  $Cl_2$ .

The equilibrium constant of the reaction is

A. 0.025

B. 0.04

C. 0.05

D. 0.02

**Answer: B**



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**18.** For the reaction  $H_2O_{(s)} \rightleftharpoons H_2O_{(l)}$  at  $^{\circ}C$  and normal pressure

A.  $\Delta H = \Delta G$

B.  $\Delta H < T\Delta S$

C.  $\Delta H > T\Delta S$

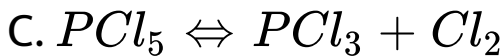
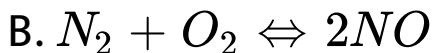
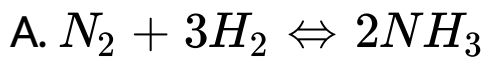
D.  $\Delta H = T\Delta S$

**Answer: B**



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**19.** In which of the following equilibrium system is the rate of the backward reaction favoured by increase of pressure



**Answer: C**



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**20.** The conversion of A to B follows second order kinetics. Doubling the concentration of

A will increase the rate of formation of B by a factor of

A.  $1/4$

B.  $1/2$

C. 4

D. 2

**Answer: C**



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21. The percentage of  $N_2$  in urea is about

A. 85

B. 46

C. 28

D. 18

**Answer: B**



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22.  $P_4O_{10}$  is not used to dry  $NH_3$  gas because

A.  $P_4O_{10}$  is not a drying agent

B.  $P_4O_{10}$  reacts with moisture in  $NH_3$

C.  $P_4O_{10}$  is basic and  $NH_3$  is acidic

D. none of these

**Answer: B**



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23. Which of the following is not used to distinguish ethene from ethane

A. alkaline  $KMnO_4$

B. ammoniacal  $Cu_2Cl_2$

C. iodine in  $CCl_4$

D. bromine in  $CCl_4$

**Answer: B**



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24. To get n-type doped semiconductor, the impurity to be added to silicon should have the following number of valence electrons ?

A. 5

B. 2

C. 1

D. 3

**Answer: A**



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25. On heating ethanol with excess of concentrated  $H_2SO_4$  to  $170^\circ C$ , the product obtained is

A. ethyne

B. ethane

C. ethene

D. ethoxy ethane

**Answer: C**



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26. How much of NaOH is required to neutralise  $1500 \text{ cm}^3$  of 0.1N HCl? (Na= 23)

A. 4g

B. 40g

C. 60g

D. 6g

**Answer: D**



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27. When electron in hydrogen atom jumps to the inner most orbit, the radiation emitted belongs to , which one of the following series?

A. Brackett series

B. Paschen series

C. Balmer series

D. Lyman series

**Answer: C**



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28. Which of the following has highest ionization potential?

A. Ne

B. F

C. B

D. Li

**Answer: A**



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29. The boiling point of water is exceptionally high because

A. there is covalent bond between H and O

B. water molecules associate due to hydrogen bonding

C. water molecule is not linear

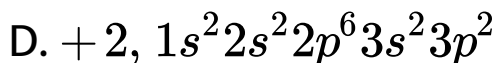
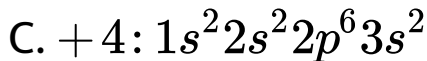
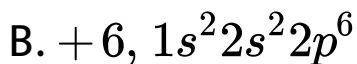
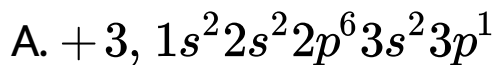
D. water molecule is linear.

**Answer: B**



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30. The oxidation number and the electronic configuration of sulphur in  $H_2SO_4$  is



**Answer: B**



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31. The total number of lattice arrangements in different crystal system is

- A. 8
- B. 14
- C. 7
- D. 3

**Answer: B**



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**32.** In thermite process the metal used as reducing agent is

A. sodium

B. aluminium

C. nickel

D. zinc

**Answer: B**



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**33.** Which of the following alloys is used for making magnet for hearing Aids?

A. Invar

B. Monel metal

C. Alnico

D. German silver

**Answer: A**



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34. Excess of  $Na^+$  ions in human system causes

A. diabetes

B. anaemia

C. high pressure

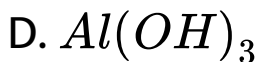
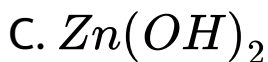
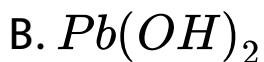
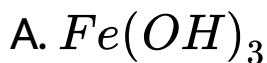
D. low blood pressure

**Answer: C**



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35. Which one of the following metallic hydroxide does not dissolve in sodium hydroxide solution?

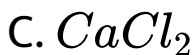
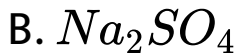


**Answer: A**



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36. Gold sol is an electronegative sol. The amount of electrolyte required to coagulate a certain amount of gold sol is minimum in case of



**Answer: B**



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37. The solubility product of a binary weak electrolyte is  $4 \times 10^{-10}$  at  $298K$ . It's solubility in  $\text{mol dm}^{-3}$  at the same temperature is

A.  $8 \times 10^{-10}$

B.  $16 \times 10^{-20}$

C.  $4 \times 10^{-5}$

D.  $2 \times 10^{-5}$

**Answer: D**



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**38.** In the case of small cuts, bleeding is stopped by applying potash alum. Here alum act as

- A. germicide
- B. coagulating agent
- C. fungicides
- D. disinfectant



**Answer: B**



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**39.** A radioactive isotope having a half life of 2.3 days was received after 9.2 days. It was found that there were 300mg of the isotope in the container. The initial amount of the isotope was

A. 1200mg

B. 3600mg

C. 4800 mg

D. 2400mg

**Answer: C**



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**40.** Aluminium displaces hydrogen from acid, but copper does not. A Galvanic cell prepared by combining  $Cu / Cu^{2+}$  and  $Al / Al^{3+}$  has an emf of 2.0V at 298K. If the potential of

copper electrode is  $0.34\text{V}$ , that of aluminium electrode is

A.  $-1.66\text{V}$

B.  $+1.66\text{V}$

C.  $-2.3\text{V}$

D.  $+2.34\text{V}$

**Answer: A**



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41. At what temperature will the RMS velocity of  $SO_2$  be the same as that of  $O_2$  at 303 K?

A. 606K

B. 273K

C. 403K

D. 303K

**Answer: A**



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42.  $10\text{dm}^3$  of  $\text{N}_2$  gas and  $10\text{dm}^3$  of gas X at the same temperature and pressure contain the same number of molecules. The gas X is

A.  $\text{CO}_2$

B. CO

C. NO

D.  $\text{H}_2$

**Answer: B**



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43. 1.5 moles of  $O_2$  combines with Mg to form MgO. The mass of Mg that has combined is (Mg= 24)

A. 48g

B. 24g

C. 72g

D. 36g

**Answer: C**



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44. The mass of  $112 \text{ cm}^3$  of  $\text{CH}_4$  gas at STP is

A. 0.08g

B. 1.6g

C. 0.16g

D. 0.8g

**Answer: A**



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45. The volume of water to be added to  $100\text{cm}^3$  of  $0.5\text{N } H_2SO_4$  to get decinormal concentration is

A.  $450\text{cm}^3$

B.  $100\text{cm}^3$

C.  $400\text{cm}^3$

D.  $500\text{cm}^3$

**Answer: D**



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46. To calculate the amount of work done in Joules during reversible isothermal expansion of an ideal gas, the volume must be expressed in

A. any unit

B.  $\text{cm}^3$  only

C.  $\text{dm}^3$  only

D.  $\text{m}^3$  only

**Answer: A**



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47. In order to decompose 9g water 142.5 kJ heat is required. Hence the enthalpy of formation of water is

A.  $-285\text{kJ}$

B.  $+285\text{kJ}$

C.  $-142.5\text{kJ}$

D.  $+142.5\text{kJ}$

**Answer: C**



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**48.** The enthalpy of combustion of  $C_6H_6(l)$  is  $-3250\text{kJ}$ . When 0.39 g of benzene is burnt in excess of oxygen in an open vessel, the amount of heat liberated is

A. 32.5J

B. 32.5 kJ

C. 16.25J

D. 16.25kJ

**Answer: D**



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**49.** In an adiabatic expansion of an ideal gas

A.  $\Delta E = 0$

B.  $W=0$

C.  $W = - \Delta E$

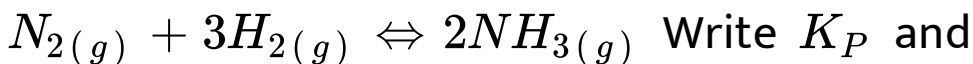
D.  $W = \Delta E$

**Answer: D**



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50. For the equilibrium



$K_C$  relationship.

A.  $k_C / (RT)^2$

B.  $K_C$

C.  $K_C = (RT)^2$

D.  $K_C(RT)$

**Answer: A**



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51. When salicylic acid is distilled with zinc dust, the product obtained is

- A. phenol
- B. benzoic acid
- C. zinc salicylate
- D. salicylaldehyde

**Answer: B**



52. Unpleasant smell of carbylamine is obtained when chloroform and alcoholic KOH are heated with

- A. any primary amine
- B. any aromatic amine
- C. any aliphatic amine
- D. any amine

**Answer: A**



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53. Which of the following is a aldohexose?

A. glucose

B. raffinose

C. cellulose

D. sucrose

**Answer: A**



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54. The alcohol obtained by the hydrolysis of oils and fats is

A. propanol

B. pentanol

C. glycol glycol

D.

**Answer: D**



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55. The base present in DNA, but not in RNA is

A. uracil

B. thymine

C. guanine

D. adenine

**Answer: B**



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