

# **CHEMISTRY**

## **RPMT - 2005**

- Q.1** What is formed on heating calcium acetate –  
(1) Acetaldehyde      (2) Methane      (3) Acetic acid      (4) Acetone
- Q.2** Cannizaro reaction is given by –  
(1) Methanol      (2) Trichloroethanol  
(3) 2, 2-dichloro propanol      (4) All of these
- Q.3** n-Butanol is an example of –  
(1) Primary alcohol      (2) Secondary alcohol      (3) Tertiary alcohol      (4) None
- Q.4** Tollen's reagent is –  
(1) Ammoniacal cuprous chloride      (2) Ammoniacal cuprous oxide  
(3) Ammoniacal silver bromide      (4) Ammoniacal silver nitrate
- Q.5** Nature of phenol is –  
(1) Acidic      (2) Basic      (3) Neutral      (4) None
- Q.6** No. of electrons in carbon is –  
(1) 4      (2) 6      (3) 8      (4) 10
- Q.7** Lucas reagent is  
(1) conc. HCl + ZnCl<sub>2</sub>      (2) dil HCl + ZnCl<sub>2</sub>      (3) ZnCl<sub>2</sub>      (4) Zn + Cl
- Q.8** The oxidation no. of Mn in KMnO<sub>4</sub> is –  
(1) 6      (2) 7      (3) 5      (4) 2
- Q.9** Hybridisation of N in NH<sub>3</sub> is –  
(1) sp      (2) sp<sup>2</sup>      (3) sp<sup>3</sup>      (4) sp<sup>3</sup>d
- Q.10** The no. of the  $\sigma$  and  $\pi$  bonds in ethylene is  
(1) 5 $\sigma$ , 1 $\pi$       (2) 3 $\sigma$ , 3 $\pi$       (3) 2 $\sigma$ , 4 $\pi$       (4) 4 $\sigma$ , 2 $\pi$
- Q.11** Which of the following are found in the nucleus  
(1) e, p      (2) p, n      (3) e, n      (4) None
- Q.12** What should be common for isomerism –  
(1) Structural formulae      (2) Chemical properties      (3) Molecular formulae      (4) Physical properties
- Q.13** Which of the following is non-polar –  
(1) C–H      (2) O–H      (3) F–F      (4) N–H
- Q.14** Process of manufacture of ether is –  
(1) Williamson's synthesis      (2) F. C. R  
(3) Wurtz reaction      (4) None
- Q.15** When would  $k_p = k_c$  –  
(1)  $\text{H}_2 + \text{I}_2 \rightleftharpoons 2\text{HI}$       (2)  $2\text{SO}_2 + \text{O}_2 \rightleftharpoons 2\text{SO}_3$   
(3)  $\text{PCl}_5 \rightleftharpoons \text{PCl}_3 + \text{Cl}_2$       (4)  $\text{N}_2 + 3\text{H}_2 \rightleftharpoons 2\text{NH}_3$

- Q.16** At 0°C reaction of aniline with  $\text{HNO}_2 + \text{HCl}$  gives –  
 (1) Phenol (2) Nitrobenzene (3) Diazocompound (4) None of these
- Q.17** What is in reversible reaction –  
 (1) Rate of reaction for both sides is same (2) Same concentration  
 (3) Reaction moves towards one direction (4) None of these
- Q.18** The favorable condition for manufacture of  $\text{NH}_3$  is –  
 (1) Low temperature and high pressure  
 (2) High temperature and high pressure and high conc. of reactants  
 (3) High temperature and low pressure and low conc. of reactants  
 (4) Low temperature and low pressure and low conc. of reactants
- Q.19** Conc. HI and diethylether will form  
 (1) Ethyl iodide (2) Ethyl alcohol (3) Ethane (4) Methyl iodide
- Q.20** The oxidation state of Cr in  $\text{Cr}_2\text{O}_7^{-2}$  is –  
 (1) 2 (2) 4 (3) 6 (4) 7
- Q.22** Electronic configuration of N is  
 (1)  $1s^2, 2s^2, 2p_x^1, 2p_y^1, 2p_z^1$  (2)  $1s^2, 2s^2, 2p_x^3$   
 (3)  $1s^2, 2s^2, 2p_x^2, 2p_y^1$  (4)  $1s^2, 2s^2, 2p_x^2, 2p_y^1$
- Q.23** The reason of diamagnetism is –  
 (1) Non paired electrons (2) Paired electrons  
 (3) Due to positive charge (4) None of these
- Q.24** Aromatic character of benzene is due to –  
 (1) M. O. T. (2) Resonance  
 (3) Aromatic displacement (4) All of these
- Q.25** Ostwald is related to –  
 (1) Electrolytic dissociation (2) Catalyst  
 (3) Law of mass action (4) Distribution law
- Q.26** Who gave the law of mass action –  
 (1) Gulberg and Waag (2) Birthlot (3) Markonikoff (4) Williamson
- Q.27** If for manufacturing HI is  $K = 50$  then the value of K for dissociation will be –  
 (1) 0.02 (2) 0.2 (3) 50 (4) 5
- Q.28** Atomic no. implies –  
 (1) No. of Protons (2) No. of Neutrons (3) Atomic mass (4) Valency
- Q.29** Fermentation is –  
 (1) Endothermic (2) Exothermic (3) Both (4) None
- Q.30** Reaction  $\text{HCOOH} + \text{conc. H}_2\text{SO}_4 \longrightarrow$  gives –  
 (1)  $\text{CO}_2$  (2) CO (3) Oxalic acid (4)  $\text{CH}_3\text{COOH}$
- Q.31** Maximum boiling point is of –  
 (1)  $\text{CH}_3\text{CHO}$  (2)  $\text{C}_2\text{H}_5\text{OC}_2\text{H}_5$  (3)  $\text{C}_2\text{H}_5\text{OH}$  (4)  $\text{C}_4\text{H}_{10}$

- Q.32** Principal quantum no. denotes –  
 (1) Size of atom (2) Circular angular momentum  
 (3) Orbital angular momentum (4) Orientation of orbital
- Q.33** In  $\text{CH} \equiv \text{CH}$  atom H will be –  
 (1) Acidic (2) Basic (3) Neutral (4) None
- Q.34** Chloroform reacts with air in presence of light to form –  
 (1)  $\text{CCl}_4$  (2)  $\text{COCl}_2$  (3) Musturd gas (4)  $\text{CH}_3\text{Cl}$
- Q.35** The bond angle in methane is –  
 (1)  $109^\circ 28'$  (2)  $180^\circ$  (3)  $104.50^\circ$  (4)  $45^\circ$
- Q.36** The fomulae for gypsum is –  
 (1)  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$  (2)  $\text{CaSO}_4 \cdot \frac{1}{2}\text{H}_2\text{O}$  (3)  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$  (4)  $\text{CaSO}_4 \cdot \text{H}_2\text{O}$
- Q.37** Bauxite is an ore of  
 (1)  $\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$  (2)  $\text{Al}_2\text{O}_3 \cdot \text{H}_2\text{O}$  (3)  $\text{Al}_2\text{O}_3 \cdot 3\text{H}_2\text{O}$  (4)  $\text{Al}_2\text{O}_3 \cdot \frac{1}{2}\text{H}_2\text{O}$
- Q.38**  $\text{HCHO} + \text{NH}_3 \longrightarrow ?$   
 (1) Formaline (2) Hexamethyl tetra amine  
 (3) Polymer (4) None
- Q.39** Bohr model clarifies –  
 (1) Spectrum of H (2) Spectrum of atom with one electron  
 (3) Spectrum of Hydrogen molecule (4) Energy spectrum
- Q.40** Which does not have OH group ?  
 (1) Phenol (2) Carboxylic acid (3) Aldehyde (4) Alcohol
- Q.41** How many elements are their in the fifth period  
 (1) 8 (2) 10 (3) 18 (4) 32
- Q.42** The shape of nucleus is –  
 (1) cm (2)  $\text{A}^\circ$  (3) Fermi (4) Amu
- Q.43** Phenol react which of the following and give bacalite –  
 (1) HCHO (2)  $\text{CH}_3\text{CHO}$  (3)  $\text{CH}_3 - \underset{\text{O}}{\underset{\parallel}{\text{C}}} - \text{CH}_3$  (4)  $\text{AlCl}_3$
- Q.44** Which one is Zerman Silver –  
 (1)  $\text{Cu} + \text{Zn} + \text{Ni}$  (2)  $\text{Cu} + \text{Au} + \text{Ag}$  (3)  $\text{Al} + \text{Ni}$  (4)  $\text{Cu} + \text{Sn} + \text{Ag} + \text{Ni}$
- Q.45** Acetyl chloride will give on reduction with  $\text{LiAlH}_4$  –  
 (1)  $\text{C}_2\text{H}_5\text{OH}$  (2)  $\text{CH}_3\text{COOH}$  (3)  $\text{CH}_3\text{CHO}$  (4)  $\text{CH}_3\text{CH}_2\text{NH}_2$
- Q.46** Which one give pink colour with Shif base  
 (1) Aldehyde (2) Ketone (3) Acid (4) Ether
- Q.47** Which one is self indicator –  
 (1)  $\text{KMnO}_4$  (2) MeOH (3) HPh (4) Phenol Red

- Q.48** What happen in oxidation –  
 (1) electron release (2) Addition of electron (3) Release of proton (4) Addition of proton
- Q.49** Which one is catalyst in Fridal Craft Reaction  
 (1) Anhy.  $\text{AlCl}_3$  (2)  $\text{AlCl}_3$  (3)  $\text{ZnCl}_2$  (4) None
- Q.50** Which on gives Iodoform test –  
 (1)  $\text{CH}_3\text{COOH}$  (2)  $\text{CH}_3\text{COCH}_3$  (3)  $\text{CH}_3\text{COOC}_2\text{H}_5$  (4)  $\text{CH}_3\text{COCl}$
- Q.51**  $\text{Zn} + \text{H}_2\text{SO}_4 \longrightarrow \text{ZnSO}_4 + \text{H}_2$   
 In above reaction Zn will be –  
 (1) Reduce (2) Oxidise  
 (3) Reduce as well as oxidise (4) None
- Q.52** Geometry of acetylene is –  
 (1) linear (2) tetrahedral (3) pyramidal (4) square planar
- Q.53** Which one is power alcohol –  
 (1) 95% alcohol (2) petrol + hydrocarbon +  $\text{C}_2\text{H}_5\text{OH}$   
 (3) sprit  $\text{CH}_3\text{OH}$  (4) sprit  $\text{C}_2\text{H}_5\text{OH}$
- Q.54** Reactivity of which one chlorine will be less –  
 (1) vinyl chloride (2) allyl chloride (3) methyl chloride (4) ethyl chloride
- Q.55** Sulphide ores are generally of concentrated by which method –  
 (1) Froth flotation method (2) magnetic separation method  
 (3) Gravitation method (4) Hand picking method
- Q.56** IUPAC name of  $\text{CH}_2 = \text{CH} - \text{CH}_2 - \text{Cl}$  is –  
 (1) Propenyl chloride (2) 1-Chloro-3-propene  
 (3) Vinyl chloride (4) 3-Choloro-1-propene
- Q.57** Which one give Biuret test –  
 (1) Urea (2) Amine (3) Nitro group (4) None
- Q.58** Gammaxene is –  
 (1) BHC (2) Benzyl chloride (3) Chloro benzene (4) None of these
- Q.59** Which one is most strongest acid –  
 (1)  $\text{CH}_3\text{COOH}$  (2)  $\text{CH}_2\text{ClCOOH}$  (3)  $\text{CHCl}_2\text{COOH}$  (4)  $\text{CCl}_3\text{COOH}$
- Q.60** What happen in  $\text{Fe}^{+2}$  to  $\text{Fe}^{+3}$  –  
 (1) Release of electron (2) Addition of electron (3) Release of proton (4) Addition of proton
- Q.61** Which one is used in photo graphic film  
 (1)  $\text{AgCl}$  (2)  $\text{AgBr}$  (3)  $\text{Ag}_2\text{O}$  (4)  $\text{AgF}$
- Q.62** In which bond length will be minimum –  
 (1)  $\text{C}_2\text{H}_5\text{OH}$  (2)  $\text{C}_2\text{H}_4$  (3)  $\text{C}_2\text{H}_2$  (4) None
- Q.63** Bayer reagent is used in which test –  
 (1) Oxidation (2) Testing of double bond  
 (3) Testing of glucose (4) Reduction

- Q.64** Which one has maximum ionisation potential –  
 (1) H (2) Li (3) B (4) Na
- Q.65** Incarbyle amine reaction alcoholic KOH reacts with which of the following –  
 (1)  $\text{CHCl}_3 + \text{Ag}$  (2)  $\text{CH}_3\text{CN} + 1^\circ \text{ amine}$  (3)  $\text{CHCl}_3 + 1^\circ \text{ amine}$  (4)  $\text{CHCl}_3 + \text{HNO}_3$
- Q.66** IP of N is higher than oxygen due to –  
 (1) Small size (2) Stability of Half filled p-orbital  
 (3) Large size (4) None
- Q.67** Who gave tetra valency of carbon –  
 (1) Kekule (2) Le-bel & Vant Hoff (3) Markonikoff (4) willimsum
- Q.68** Markownikov's reaction is given by –  
 (1) Saturated hydrocarbon (2) Unsaturated hydrocarbon  
 (3) Ether (4) Alcohol
- Q.69** Which of the following metals is in free state –  
 (1) Al (2) Mg (3) Cu (4) Fe
- Q.70** Which of the following is used in Rimer Timen reaction –  
 (1)  $\text{CHCl}_3$  (2)  $\text{C}_2\text{H}_5\text{Cl}$  (3)  $\text{C}_2\text{H}_5\text{OH}$  (4)  $\text{CH}_3\text{CHO}$
- Q.71** In nucleophilic aliphatic displacement the nucleophile is generally –  
 (1) Acid (2) Base (3) Neutral (4) Salt
- Q.72** We get by Gabriel pthalamide condensation reaction –  
 (1)  $1^\circ \text{ amine}$  (2)  $2^\circ \text{ amine}$  (3)  $3^\circ \text{ amine}$  (4) None
- Q.73** Aldehydes and ketones are differentiated by –  
 (1)  $\text{NH}_3$  (2) Fehiling solution (3)  $\text{H}_2\text{SO}_4$  (4)  $\text{NaHSO}_4$
- Q.74** Electronic configuration  $3d^2 4s^2$  belongs to element of which block –  
 (1) s-block (2) p-block (3) d-block (4) f-block
- Q.75** Transition elements are –  
 (1) All metals (2) Some metals & Some non metals  
 (3) Highly reactive (4) Alloy
- Q.76** Which one of the following is optically active –
- |   |   |
|---|---|
| $\begin{array}{c} \text{H} \\   \\ \text{(1) H} - \text{H} - \text{COOH} \\   \\ \text{H} \end{array}$        | $\begin{array}{c} \text{H} \\   \\ \text{(2) CH}_3 - \text{H} - \text{COOH} \\   \\ \text{Cl} \end{array}$    |
| $\begin{array}{c} \text{CH}_3 \\   \\ \text{(3) CH}_3 - \text{C} - \text{COOH} \\   \\ \text{OH} \end{array}$ | $\begin{array}{c} \text{CH}_3 \\   \\ \text{(4) CH}_3 - \text{C} - \text{COOH} \\   \\ \text{Cl} \end{array}$ |
- Q.77** Which one of the following is electrovalent bond  
 (1)  $\text{BF}_3$  (2)  $\text{SiCl}_4$  (3)  $\text{MgCl}_2$  (4)  $\text{CH}_4$

- Q.78** The reaction of  $\text{CH}_3\text{CONH}_2$  with  $\text{P}_2\text{O}_5$  gives –  
 (1) Ethyl amine (2) Ethyl alcohol (3) Acetic acid (4) Methyl cyanide
- Q.79** Hybridisation in carbonyl group is –  
 (1)  $\text{sp}^2$  (2)  $\text{sp}^3$  (3) sp (4) All
- Q.80** Aspirin is –  
 (1) Acetyl salycisilic acid (2) Methyl salycisilic acid  
 (3) Methyl salycilate (4) Ethyl salycilate
- Q.81** Which of the following has co-covalent bond –  
 (1)  $\text{CH}_3\text{COOH}$  (2)  $\text{H}_2\text{O}$  (3)  $\text{NH}_4\text{Cl}$  (4)  $\text{AlCl}_3$
- Q.82** According to Lawry & bronsted which one is both acid and base –  
 (1)  $\text{H}_3\text{O}^+$  (2)  $\text{HCO}_3^-$  (3)  $\text{SO}_4^{2-}$  (4)  $\text{Cl}^-$
- Q.83** Reaction of aluminium carbide with water gives  
 (1)  $\text{CH}_4$  (2)  $\text{C}_2\text{H}_6$  (3)  $\text{C}_2\text{H}_2$  (4)  $\text{C}_2\text{H}_4$
- Q.84** Which salt undergoes hydrolysis –  
 (1)  $\text{CH}_3\text{COONa}$  (2)  $\text{KNO}_3$  (3)  $\text{KCl}$  (4)  $\text{K}_2\text{SO}_4$
- Q.85** Which one is acid according to Lewis theory –  
 (1) Proton donor (2) Proton Acceptor (3) Lone pair donor (4) Lone pair acceptor
- Q.86**  $\text{CH}_3\text{—CH}_2\text{—X} + \text{KOH}(\text{alc.}) \longrightarrow \text{C}_2\text{H}_4$  Above reaction is –  
 (1) Elimination (2) Substitution  
 (3) Addition (4) Rearrangement Reaciton
- Q.88** In Benzene acetic acid works as dimer –  
 (1) Due to  $\text{COOH}$  group (2) Due to acidity of  $\alpha\text{—H}$   
 (3) Due to H–bonding (4) None of these
- Q.89** Conjugate of strong acid will be –  
 (1) Strong base (2) Weak base (3) weak acid (4) None
- Q.90** By which we can get metal from earth –  
 (1) Mineral (2) Raw material (3) Compound (4) Salt
- Q.91** H – bond is absent in –  
 (1)  $\text{C}_2\text{H}_5\text{OH}$  (2)  $\text{H}_2\text{O}$  (3)  $\text{CH}_4$  (4)  $\text{NH}_3$
- Q.92** In reversible process the velocity will be –  
 (1) Same (2) Different (3) More (4) Indefinite
- Q.93** Reducing agent does –  
 (1) Accept electrons (2) Gives electrons (3) Gives protons (4) Accept protons