Examrace

Competitive Exams Chemistry Mock Test 13

Q-1 The energy of first excited state of Li^{2+} will be

(a) 13.6 eV

(b) 27.2 eV

(c) 30.6 eV

(d) 40.8 eV

Q-2 which of the following phenomena will occur when two atoms of the elements having same spin of electron approach for bonding?

(a) Orbital overlap will not occur

(b) Bonding will not occur

(c) Both (a) and (b) are correct

(d) None of these is correct

Q-3 The number of octahedral sites per sphere in fcc structure are

(a) 8

(b) 4

(c) 2

(d) 1

Q-4 Due to Franked defect, the density of ionic solids

(a) Decreases

(b) Increases

(c) Does not change

(d) Change depends on crystal structure

Q-5 For the given electrolyte $A_x B_y$, the degree of dissociation 'α' can be given as

(a) $\alpha = \dfrac{i-1}{x+y-1}$

(b) $i\,(1)\,\alpha + x\alpha + y\alpha$

(c) $\alpha = \dfrac{1-i}{1-x\,y}$

Q-6 The efficiency of a heat engine is maximum when

(a) Temperature of sink > temperature of source

(b) Temperature of source > temperature of sink

(c) The difference between temperature of source and sink is very high

(d) None of these

Q-7 If three faradays of electricity is passed through the solution of $AgNO_3$, $CuSO_4$ and $AuCl_3$, the molar ratio of the captions deposited at the cathodes will be

(a) 1: 1: 1

(b) 1: 2: 3

(c) 3: 2: 1

(d) 6: 3: 2

Q-8 A gas $'X'$ at 1 atm is bubbled through a solution containing a mixture of 1 M Y and 1 M Z at $25°C$. If standard reduction potential of Z > Y > Y X, then

(a) Y will oxidize X and not Z

(b) Y will oxidize Z and not X

(c) Y will oxidize both X and Z

(d) Y will reduce both Z and Z

Q-9 The rate constant of a chemical reaction can be increased by

(a) Decreasing the temperature

(b) Increasing the temperature

(c) Increasing concentration of reactants

(d) Decreasing concentration of reactants

Q-10 Consider the two equations at a particular temperature $2N_2\ o_5 \rightarrow 4\,NO_2 + o_2\ N_2o_5 \rightarrow 2\,NO_2 + \frac{1}{2}o_2$ If E_1 and E_2 represents the activation energy for the first and second reaction respectively then

(a) E 1 > E 2

(b) E 1 < E 2

(c) E 1 = 2E 2

(d) E 1 = E 2

Q-11 Which one of the following is an example of a hydrophilic colloidal sol?

(a) Sulphur

(b) $As_2\ \ S_3$

(c) Gold sol

(d) Starch

Q-12 n $P_4\ O_{10}$ the number of oxygen atoms attached to each phosphorus atom is

(a) 2

(b) 3

(c) 4

(d) 5

Q-13 which of the following compound acts both ass an oxidizing as well as reducing agent?

(a) SO_2

(b) MnO_2

(c) $Al_2\ \ O_3$

(d) CrO_3

Q-14 Green vitriol is

(a) $CuSO_4$

(b) $CuSO_4\ .7H_2O$

(c) $CuSO_4\ .5H_2O$

(d) $FeSO_4\ .7H_2O$

Q-15 only lanthanide which is radioactive is

(a) Sn

(b) Yb

(c) Pm

(d) Eu

Q-16 When $\frac{23}{13}$Al is bombarded with α particles, a radioactive isotope of phosphorus $\frac{30}{15}P$ with the emission of ... is formed

(a) Neutrons

(b) Protons

(c) Positrons

(d) Electrons

Q-17 A freshly prepared radioactive source of half life period 2 hours, emits radiations of intensity which is 64 times the permissible safe level. The minimum time after which it would be possible to work with this source is

(a) 6 hours

(b) 12 hours

(c) 24 hours

(d) 48 hours

Q-18 which of the following has the highest par magnetism?

(a) $\left[\mathrm{Cr}\ (H_2\ O)_6\right]^{3+}$

(b) $\left[\mathrm{Fe}\ (H_2\ O)_6\right]^{2+}$

(c) $\left[\mathrm{Cu}\ (H_2\ O)_6\right]^{2+}$

(d) $\left[\mathrm{Zn}\ (H_2\ O)_6\right]^{2+}$

Q-19 which of the following will form an octahedral complex?

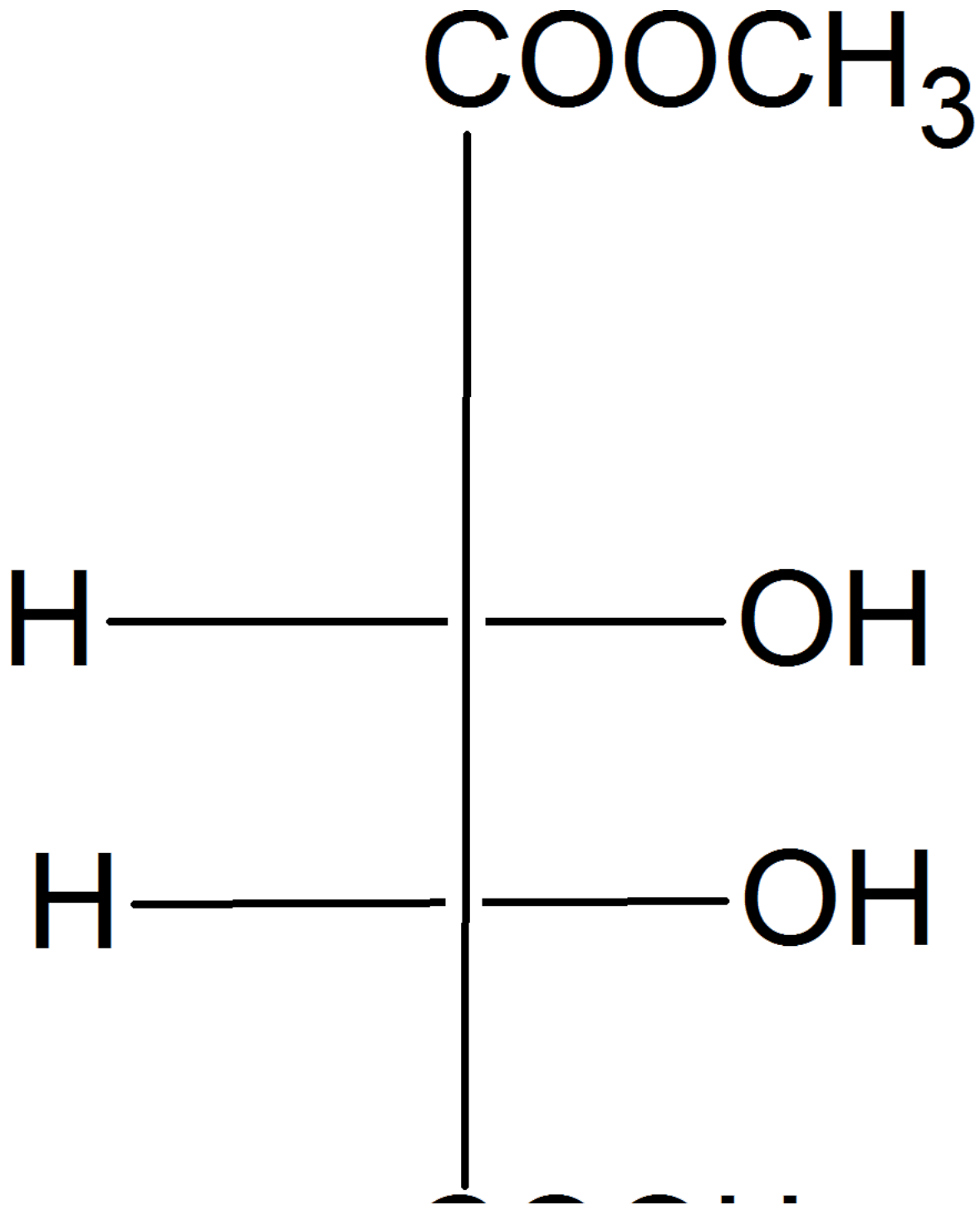
(a) d^4 (Low spin)

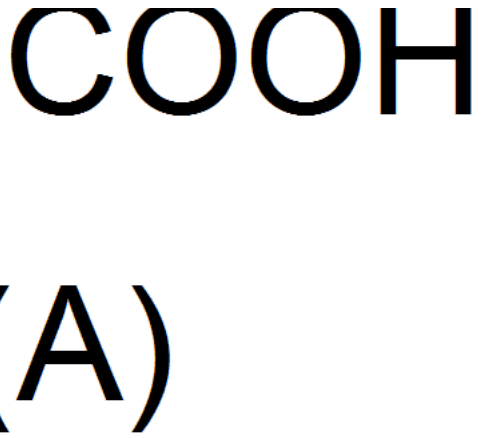
(b) d_8 (High spin)

(c) d_6 (Low spin)

(d) All of these

Q-20 The correct statement about A, B, C is


COOCH3
H
OH
H
OH



(A)

(a) A and B are identical

(b) A and B are diastereomers

(c) A and C are enantiomers

(d) A and B are enantiomers

Q-21 Phenol and benzoic acid can be distinguished by

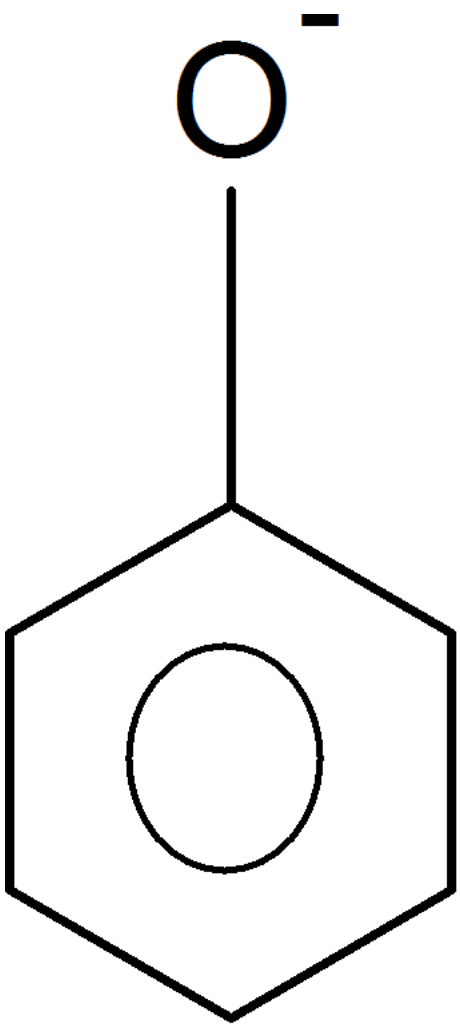
(a) Aqueous $NaHCO_3$

(b) Aqueous $NaNO_3$

(c) Aqueous NaOH

(d) conc. $H_2\ SO_4$

Q-22 Find the correct order


O
-

(a) I > II > III > IV

(b) IV > I > II > III

(c) I > II > IV > III

(d) II > III > IV > I

Q-23 When acetaldehyde is heated with Fehling's solution, it gives a precipitate of

(a) Cu

(b) CuO

(c) $Cu + Cu_2\ O + CuO$

(d) $Cu_2\ O$

Q-24 The principal organic product formed in the reaction $CH_2 = CH\ (CH_2)_8 COOH + HBr \xrightarrow{\text{Perozide}}$ is

(a) $CH_3\ CH\,(Br)\,(CH_2)_8\ COOH$

(b) $CH_2 = CH\,(CH_2)_8\,COBr$

(c) $CH_2\ Br\,(CH_2)_9\,COOH$

(d) $CH_2 = CH\,(CH_2)_7\,ChBrCOOH$

Q-25 Secondary nitro alkanes on treatment with nitrous acid form

(a) Nitrolic acids

(b) Carboxylic acids

(c) Pseudonitroles

(d) Ketones

Q-26 In HS, I, $R - NH_2, NH_3$, the order of proton accepting tendency will be

(a) $i^- > NH_3 > R - NH_2 > HS$

(b) $NH_3 > R - NH_2 > HS^-\ I$

(c) $R - NH_2 > NH_3 > HS^- > I$

(d) $HS^-\ R - NH_2 > NH_3 > I$

Q-27 In vulcanization of rubber

(a) Sulphur reacts to form new compound

(b) Sulphur cross links are introduced

(c) Sulphur forms a very thin protective layer over rubber

(d) All the statement is correct

Q-28 which of the following does not represent a disaccharide?

(a) Maltose

(b) Sucrose

(c) Lactose

(d) Dextrose

Q-29 which one of the following vitamins contains a metal atom?

(a) Riboflavin

(b) Vitamin B_{12}

(c) Antiseptic

(d) Anti-malarial

Q-30 Veronal, a barbiturate drug is used as

(a) Antihistamine

(b) Sedative

(c) Antiseptic

(d) Anti-malarial

Q-31 Gay Lussa's law of gaseous volume is derived from

(a) Law of definite properties

(b) Law of multiple properties

(c) Law of reciprocal properties

(d) Experimental observation

Q-32 One liter flask contains air, water vapour and small amount of liquid water at pressure of 200 mm Hg. If this is connected to another one liter evacuated flask, what will be the final pressure of the gas mixture to be $50°C$.

(Aqueous tension at $50°C = 93$ mm Hg)

(a) 120.56 mm

(b) 230 mm

(c) 146.5 mm

(d) 109.4 mm

Q-33 The correct order of decreasing ionic radius among the following anions would be

(a) Se^{2-}, I, Br, F, O^2

(b) $F^-, Br, O^2, Se^{2-}, I^-$

(c) $I, Se^{2-}, Br, O^{2-}, F$

(d) $F^-, O^{2-}, Br^-, Se^{2-}, I^-$

Q-34 $I_2 + I^- \rightleftharpoons I_3^-$ this reaction is set up in aqueous medium. We start with 1 mole of I_2 and 0.5 mole of I^- in 1 L flask. After equilibrium, the excess of $AgNO_3$ gave 0.25 mole of yellow ppt. Then the equilibrium constant is

(a) 1.33

(b) 2.66

(c) 2.00

(d) 3.00

Q-35 at $90°C$, pure water has $[H^+] = 10^{-6}\ M$. the value of K_w at $90°C$ is

(a) 10^{-6}

(b) 10^{-8}

(c) 10^{-12}

(d) 10^{-14}

Q-36 Nitrogen dioxide cannot be obtained by heating

(a) pb $(NO_3)_2$

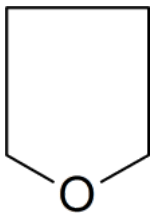
(b) Cu $(NO_3)_2$

(c) $AgNO_3$

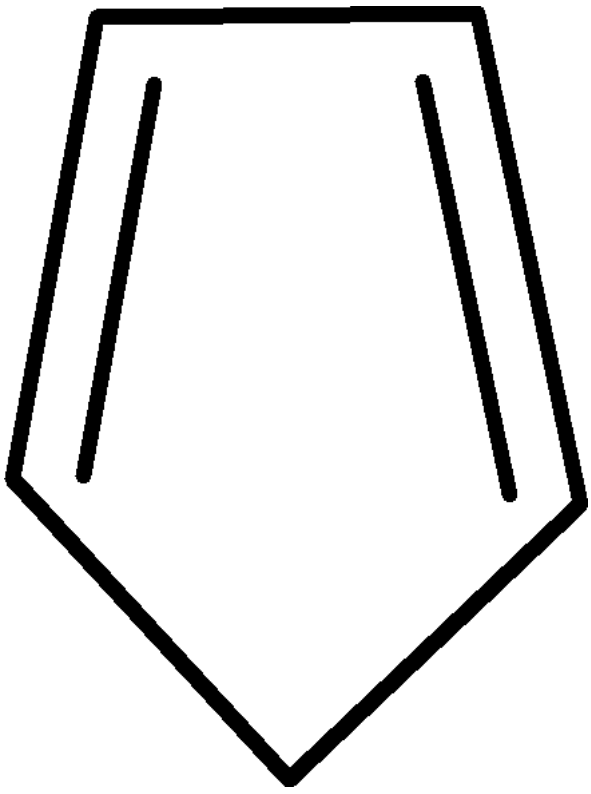
(d) KNO_3

Q-37 which of the following is heterocyclic aromatic species?

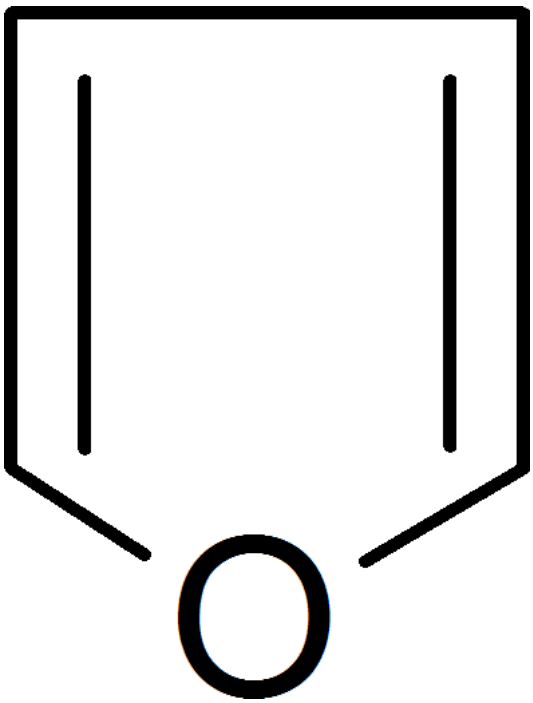
(a)



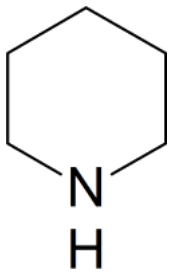
(b)



(c)



(d)



Q-38 which of the following halides undergoes nucleophilic substitution most readily?

(a) $p-H_3\,CC_6\,H_4\,Cl$

(b) $o-MeOC_6\,H_4\,Cl$

(c) $p-ClC_6\,H_4\,Cl$

(d) $C_6H_5\,CH\,(Cl)\,CH_3$

Q-39 Dumas' method involves the determination of nitrogen content in the organic compound in the form of

(a) NH_3

(b) N_2

(c) NaCN

(d) $(NH_4)_2\ SO_4$

Q-40 Group V captions are precipitated in form of carbonates by $(NH_4)_2\ CO_3$. why can we not use $Na_2\ CO_3$ instead of $(NH_4)_2\ CO_3$?

(a) Because $Na_2\ CO_3$ will precipitate $MgCO_3$

(b) Because $Na_2\ CO_3$ is insoluble in water

(c) Because it is an ionic compound

(d) None of these