

# MDU M.Sc Entrance: 2012

## Chemistry

### ❖ Question Paper

All questions are compulsory (One mark each)

Total Marks: 100 (1.5 Hours)

Q.1 From the following, which is more covalent?

- (a)  $\text{Al}_2\text{S}_3$                       (b)  $\text{AlN}$                       (c)  $\text{Al}_2\text{Cl}_6$                       (d)  $\text{Al}_2\text{O}_3$

Q.2 Which of the following statements is/are true?

- (a) Adsorption increase with increase in pressure  
(b) Adsorption decrease with increase in temperature  
(c) Adsorption is an exothermic process  
(d) All of these

Q.3 If the density of air is 1.2 g/lit, what is the volume occupied by 7.8g of air?

- (a) 10.10 lit                      (b) 10 lit                      (c) 6 lit                      (d) 6.5 lit

Q.4 Which of the following species represent the example of  $dsp^2$  hybridisation?

- (a)  $[\text{FeF}_6]^{3-}$                       (b)  $[\text{Fe}(\text{CN})_6]^{3-}$                       (c)  $[\text{Ni}(\text{CN})_4]^{2-}$                       (d)  $[\text{Zn}(\text{NH}_3)_4]^{2+}$

Q.5 Correct characteristics of the functional groups of adenine in DNA base pair

- (a) Both N(3) and C(6) $\text{NH}_2$  are hydrogen bond acceptors  
(b) Both N(3) and C(6) $\text{NH}_2$  are hydrogen bond donors  
(c) N(3) is a hydrogen bond acceptor and C(6) $\text{NH}_2$  is a hydrogen bond donors  
(d) N(3) is a hydrogen bond donors and C(6) $\text{NH}_2$  is a hydrogen bond acceptor

Q.6 The most probable candidate to form an octahedral complex is

- (a)  $d^{10}$  (b)  $d^8$ (high spin) (c)  $d^8$ (low spin) (d)  $d^1$ (low spin)

Q.7 Which pair from the following behaves as metalloid?

- (a) Al and Zn (b) Rb and Cs (c) Br and I (d) Pt and I

Q.8 For a substitution reaction following a dissociative mechanism, the rate determining step is dependent on

- (a) Solvent conc. (b) Leaving group (c) Entering group (d) Nature of complex

Q.9 The amino acid constituents of artificial sweetener given below are:

- (a) L-aspartic acid and L-tyrosine (b) D-Glutamic acid and L-phenylglycine  
(c) L- aspartic acid and L-phenylalanine (d) L-Glutamic acid and L-phenylglycine

Q.10 In the following statements, which one is incorrect?

- (a) Atomic radius of Zr and Hf are same because of lanthanide contraction  
(b)  $\text{La}(\text{OH})_3$  is less basic than  $\text{Lu}(\text{OH})_3$   
(c) La is actually an element of transition series rather than lanthanides  
(d) In lanthanide series, ionic radius of  $\text{Lu}^{3+}$  ion decreases

Q.11 In dichromate dianion

- (a) 3 Cr–O bonds are equivalent (b) 6 Cr–O bonds are equivalent  
(c) All the Cr–O bonds are non-equivalent (d) 4 Cr–O bonds are equivalent

Q.12 Vacuum is a measure of

- (a) Leaking rate of air (b) Leaking rate of oil  
(c) Leaking rate of moisture (d) Emptiness

Q.13 The pre-exponential factor 'A' in the Arrhenius Equation depends on which of the following?

- (a) Collision frequency (b) Gibbs free energy of reaction  
(c) Energy of activation of the reaction (d) None of these

Q.14 Spectroscopic transitions leading to rotation of molecules will appear at which of the following region of the electromagnetic spectrum?

- (a) UV (b) microwave (c) IR (d) Radiofrequency

Q.15 The second state of harmonic oscillator has number of nodes

- (a) 0 (b) 1 (c) 2 (d) 3

Q.16 What happens during digestion of a precipitate?

- (a) Coalescence of smaller crystallites (b) Recrystallisation takes place  
(c) Completion of precipitation (d) Rate of the reaction increases

Q.17 Among the following group of oxides, the group of oxides that cannot be reduced to give the respective metals is

- (a)  $\text{PbO}$ ,  $\text{Fe}_3\text{O}_4$  (b)  $\text{Fe}_2\text{O}_3$ ,  $\text{ZnO}$  (c)  $\text{CaO}$ ,  $\text{K}_2\text{O}$  (d)  $\text{Cu}_2\text{O}$ ,  $\text{SnO}_2$

Q.18 In which of the following reaction migration of alkyl group from carbon to oxygen is observed?

- (a) Pinacol-pinacolone rearrangement  
(b) Preparation of phenol from cumene hydroperoxide  
(c) Baeyer-villiger oxidation  
(d) Both Baeyer-villiger oxidation and Preparation of phenol from cumene hydroperoxide

Q.19 An inorganic mixture dissolves in hot conc. HCl giving a blue coloured solution which on addition of water becomes pink. The mixture contains

- (a)  $\text{Fe}^{3+}$  (b)  $\text{Cr}^{3+}$  (c)  $\text{Ni}^{2+}$  (d)  $\text{Co}^{2+}$

Q.20 The product X in the following reaction  $6\text{LiH} + 8\text{BF}_3 \rightarrow 6\text{LiBF}_4 + \text{X}$  is

- (a)  $\text{B}_4\text{H}_{10}$  (b)  $\text{B}_2\text{H}_6$  (c)  $\text{B}_3\text{H}_8$  (d)  $\text{BH}_3$

Q.21  $\text{Tl}^+$  compounds are poisonous because

- (a) Stop blood circulation (b) They attack liver  
(c) Cut-off breathing capability (d) They can cause blood infection

Q.22 Total orbital angular momentum of  $np^6$  electronic system is

- (a) 0 (b)  $1/2$  (c) 2 (d) 1

Q.23 The oxidation state of oxygen in  $\text{O}_2\text{F}_2$  is

- (a) +2 (b) +1 (c) +4 (d) -2

Q.24 For a single paramagnetic compound, which one of the following is true?

- (a) Magnetic susceptibility decreases initially and then increase with decrease in temperature  
(b) Magnetic susceptibility increases with decrease in temperature  
(c) Magnetic susceptibility decreases with decrease in temperature  
(d) Magnetic susceptibility increases initially and then decrease with decrease in temperature

Q.25 Two isotonic solutions will have same

- (a) Boiling point (b) Osmotic pressure (c) Vapour pressure (d) Freezing point

Q.26 Melting point of the chlorides of alkali metals decreases in the order

- (a)  $\text{LiCl} > \text{NaCl} > \text{RbCl} > \text{KCl} > \text{CsCl}$  (b)  $\text{LiCl} > \text{NaCl} > \text{KCl} > \text{RbCl} > \text{CsCl}$

- (c)  $\text{LiCl} > \text{NaCl} > \text{KCl} > \text{CsCl} > \text{RbCl}$                       (d)  $\text{LiCl} > \text{KCl} > \text{NaCl} > \text{RbCl} > \text{CsCl}$

Q.27 Although carbon and oxygen are the constituent of carbonate and oxalate, the reason behind oxalate being an interfering anion

- (a) Higher oxidizability of oxalate than carbonate      (b) Higher reducibility of oxalate than carbonate  
(c) Higher chelating ability of oxalate than carbonate      (d) Higher polarisability of oxalate than carbonate

Q.28 The structure shown by a tetranuclear metal cluster having 62 electrons is

- (a) Square plane              (b) Butterfly      (c) Tetrahedron              (d) Bicapped tetrahedron

Q.29 The p-electronic is equivalent to the term

- (a)  $^3\text{P}$                       (b)  $^4\text{P}$                       (c)  $^3\text{F}$                       (d)  $^2\text{P}$

Q.30 The anticancer drug cis-platin

- (a)  $\text{Pt}(\text{NH}_3)_2\text{Cl}_2$               (b)  $\text{Pt}(\text{H}_2\text{O})_2\text{Cl}_2$               (c)  $\text{Pt}(\text{NH}_3)_3\text{Cl}$               (d)  $\text{Pt}(\text{NH}_3)\text{Cl}_3$

Q.31 Which of the cannot show linkage isomerism?

- (a)  $\text{NO}_3^-$                       (b)  $\text{SCN}^-$                       (c)  $\text{CN}^-$                       (d)  $\text{NH}_3$

Q.32A ligand can be also regarded as

- (a) Lewis base              (b) Lewis acid              (c) Bronsted base              (d) Bronsted acid

Q.33 The isotope atom different in

- (a) Number of electrons      (b) No. of neutrons      (c) Atomic weight      (d) Atomic number

Q.34 who is regarded as father of chemistry

- (a) Einstein                      (b) C.V Raman                      (c) Lavoisier                      (d) Rutherford

Q.35 A metal crystallizes in fcc structure with a unit cell side of 500 pm. If the density of the crystal is 1.33 g/cc, the molar mass of the metal is close to

- (a) 23                      (b) 24                      (c) 25                      (d) 26

Q.36 The packing fraction of a simple cubic lattice is close to

- (a) 0.94                      (b) 0.76                      (c) 0.52                      (d) 0.45

Q.37 The internal pressure  $(\partial U/\partial V)_T$  of a real gas is related to the compressibility factor  $Z = p\bar{V}/RT$  by [ $\bar{V}$  is the molar volume]

- (a)  $(\partial U/\partial V)_T = RT(\partial Z/\partial V)_T$                       (b)  $(\partial U/\partial V)_T = RT/(\bar{V}Z)$   
 (c)  $(\partial U/\partial V)_T = (RT^2/\bar{V})(\partial Z/\partial V)_V$                       (d)  $(\partial U/\partial V)_T = (\bar{V}/RT^2)(\partial Z/\partial V)_V$

Q.38 The equilibrium constant for an electrochemical reaction,



Is  $\left[ E^0(\text{Fe}^{3+}/\text{Fe}^{2+}) = 0.75 \text{ V}, E^0\left(\frac{\text{Sn}^{4+}}{\text{Sn}^{2+}}\right) = 0.15 \text{ V}, \left(\frac{2.303RT}{F}\right) = 0.06 \text{ V} \right]$

- (a)  $10^{10}$                       (b)  $10^{20}$                       (c)  $10^{30}$                       (d)  $10^{40}$

Q.39 The vibrational frequency and anharmonicity constant of an alkali halide are  $300 \text{ cm}^{-1}$  and 0.0025 respectively. The positions (in  $\text{cm}^{-1}$ ) of its fundamental mode and first overtone are respectively

- (a) 300, 600                      (b) 298.5, 595.5                      (c) 301.5, 604.5                      (d) 290, 580

Q.40 The concentrations of a species A undergoing the reaction  $A \rightarrow P$  is 1.0, 0.5, 0.33, 0.25  $\text{mol dm}^{-3}$  at  $t = 0, 1, 2$  and 3 seconds, respectively. The order of the reaction is:

- (a) Two                      (b) One                      (c) Zero                      (d) Three

Q.41 The difference in energy levels of  $n = 2$  and  $n = 1$  of a particle in a one dimensional box is 6 units of energy. In the same units, what is the difference in energy levels of  $n = 3$  and  $n = 2$  for the above system?

- (a) 4 (b) 5 (c) 9 (d) 10

Q.42 What is the atomic term symbol for helium atom with electronic configuration  $1s^2$ ?

- (a)  $^2S_{1/2}$  (b)  $^1P_0$  (c)  $^1S_0$  (d)  $^1S_1$

Q.43 In NMR spectroscopy, the product of the nuclear 'g' factor ( $g_N$ ), the nuclear magneton ( $\beta_N$ ) and the magnetic field strength ( $B_0$ ) gives the

- (a) Energy of transition from  $\alpha$  to  $\beta$  state (b) Chemical shift  
(c) Spin-spin coupling constant (d) Magnetogyric ratio

Q.44 The lowest pressure at which the liquid phase of a pure substance can exist is known as

- (a) Critical point pressure. (b) Super-incumbent pressure.  
(c) Triple-point pressure. (d) Saturation vapour pressure.

Q.45 If the concentration ( $c$ ) is increased to 4 times its original value ( $c$ ), the change in molar conductivity for strong electrolytes is (where  $b$  is Kohlrausch constant)

- (a) 0 (b)  $b\sqrt{c}$  (c)  $2b\sqrt{c}$  (d)  $4b\sqrt{c}$

Q.46 In atom recombination reactions

- (a)  $E_a = 0, \Delta S^\ddagger = +ve, \Delta H^\ddagger = +ve$  (b)  $E_a = 0, \Delta S^\ddagger = -ve, \Delta H^\ddagger = -ve$   
(c)  $E_a = +ve, \Delta S^\ddagger = -ve, \Delta H^\ddagger = -ve$  (d)  $E_a = +ve, \Delta S^\ddagger = +ve, \Delta H^\ddagger = +ve$

Q.47 In the Lindemann mechanism of unimolecular reactions, the observed order at low concentration is

- (a) 0.1 (b) 1 (c) 1.5 (d) 2

Q.48 The coordinates for the atoms in a body centred cubic unit cell are

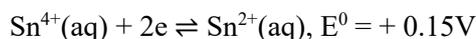


- (a) 1 (b) 2 (c) 1/2 (d) 1/4

Q.56 The S and L values for  $^{15}\text{N}$  atom respectively, are

- (a)  $\frac{1}{2}$  and 1 (b)  $\frac{1}{2}$  and 0 (c) 1 and 0 (d)  $\frac{3}{2}$  and 0

Q.57 For the cell reaction,  $\text{Sn(s)} + \text{Sn}^{4+}(\text{aq}) \rightleftharpoons 2\text{Sn}^{2+}(\text{aq})$ , separate electrode reactions could be written with the respective standard electrode potential data at  $25^\circ\text{C}$  as



When  $RT/F$  is given as 25.7 mV, logarithm of the equilibrium constant ( $\ln K$ ) is

- (a) 22.6 (b) 226 (c) 2.26 (d)  $2.26 \times 10^{-1}$

Q.58 For a process in a closed system, temperature is equal to

- (a)  $\left(\frac{\partial H}{\partial P}\right)_S$  (b)  $-\left(\frac{\partial A}{\partial V}\right)_T$  (c)  $\left(\frac{\partial G}{\partial P}\right)_T$  (d)  $\left(\frac{\partial H}{\partial S}\right)_P$

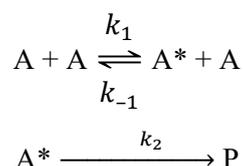
Q.59 The exact differential  $df$  of a state function  $f(x, y)$ , among the following is

- (a)  $x dy$  (b)  $dx - \frac{x}{y} dy$  (c)  $y dx - x dy$  (d)  $\frac{1}{y} dx - \frac{x}{y^2} dy$

Q.60 For an enzyme-substrate reaction, a plot between  $\frac{1}{v}$  and  $\frac{1}{[S]_0}$  yields a slope of 40s. If the enzyme concentration is  $2.5 \mu\text{M}$ , then the catalytic efficiency of the enzyme is

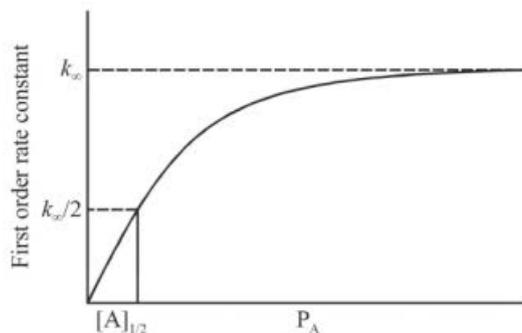
- (a)  $40 \text{ L mol}^{-1} \text{ s}^{-1}$  (b)  $10^{-4} \text{ L mol}^{-1} \text{ s}^{-1}$  (c)  $10^7 \text{ L mol}^{-1} \text{ s}^{-1}$  (d)  $10^4 \text{ L mol}^{-1} \text{ s}^{-1}$

Q.61 Species A undergoes a unimolecular reaction as follows:



For this reaction, the first order rate constant at high pressure is  $k_\infty$ . The first order rate constant

becomes  $\frac{k_\infty}{2}$  when pressure of A is  $[A]_{1/2}$



The value of  $k_1$  will be

- (a)  $\frac{k_\infty}{[A]_{1/2}}$       (b)  $k_\infty [A]_{1/2}$       (c)  $k_\infty - [A]_{1/2}$       (d)  $\frac{[A]_{1/2}}{k_\infty}$

Q.62 A process is carried out at constant volume and at constant entropy. It will be spontaneous if:

- (a)  $\Delta G < 0$       (b)  $\Delta H < 0$       (c)  $\Delta U < 0$       (d)  $\Delta A < 0$

Q.63 The half-life of a zero-order reaction ( $A \rightarrow P$ ) is given by ( $k =$  rate constant):

- (a)  $t_{1/2} = \frac{[A]_0}{2k}$       (b)  $t_{1/2} = \frac{2.303}{k}$       (c)  $t_{1/2} = \frac{[A]_0}{k}$       (d)  $t_{1/2} = \frac{1}{k[A]_0}$

Q.64 For an aqueous solution at 25°C, the Debye-Huckel limiting law is given by

- (a)  $\log \gamma_{\pm} = 0.509 |Z_+ Z_-| \sqrt{\mu}$       (b)  $\log \gamma_{\pm} = 0.509 |Z_+ Z_-| \mu$   
 (c)  $\log \gamma_{\pm} = -0.509 |Z_+ Z_-| \sqrt{\mu}$       (d)  $\log \gamma_{\pm} = -0.509 |Z_+ Z_-| \mu^2$

Q.65 According to VSEPR theory, the molecule/ion having ideal tetrahedral shape is:

- (a)  $\text{SF}_4$       (b)  $\text{SO}_4^{2-}$       (c)  $\text{S}_2\text{Cl}_2$       (d)  $\text{SO}_2\text{Cl}_2$

Q.66 Observe the following aqueous solutions of same compound. All the measurements are made at same wavelength and same temperature.

Solution A: The transmittance of  $0.1 \text{ mol dm}^{-3}$  using  $1 \text{ cm}$  cell is 0.5.

Solution B: The optical density  $0.5 \text{ mol dm}^{-3}$  is measured using 1 mm cell.

Solution C: The transmittance of this solution is 0.1.

The optical density of these solutions follow the order.

( $\log 20 = 1.3010$ ;  $\log 30 = 1.4771$ ,  $\log 50 = 1.69900$ )

- (a)  $A > B > C$                       (b)  $B > C > A$                       (c)  $B > A > C$                       (d)  $C > A > B$

Q.67 If the ratio of composition of oxidized and reduced species in electrochemical cell, is given as  $\frac{[O]}{[R]} = e^2$ , the correct potential difference will be

- (a)  $E - E_0 = +\frac{2RT}{nF}$                       (b)  $E - E_0 = -\frac{2RT}{nF}$                       (c)  $E - E_0 = \frac{RT}{nF}$                       (d)  $E - E_0 = -\frac{RT}{nF}$

Q.68 The IUPAC name for the compound given below is



- (a) (2R, 3Z)-7-phenylhept-3-en-2-ol                      (b) (2S, 3Z)-7-phenylhept-3-en-2-ol  
(c) (2R, 3E)-7-phenylhept-3-en-2-ol                      (d) (2S, 3E)-7-phenylhept-3-en-2-ol

Q.69 In the IR spectrum, the absorption band due to carbonyl group in phenyl acetate appears at

- (a)  $1800 \text{ cm}^{-1}$                       (b)  $1760 \text{ cm}^{-1}$                       (c)  $1710 \text{ cm}^{-1}$                       (d)  $1660 \text{ cm}^{-1}$

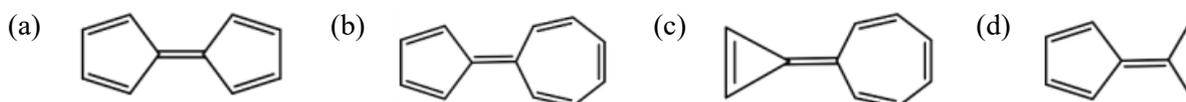
Q.70 The heterocyclic ring present in the amino acid histidine is

- (a) Pyridine                      (b) Tetrahydropyrrole                      (c) Indole                      (d) Imidazole

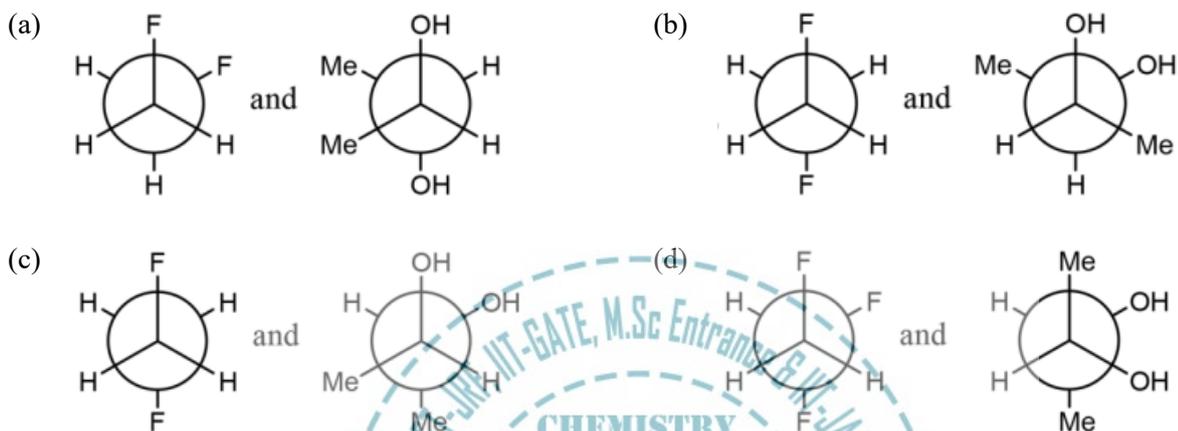
Q.71 The gauche conformation ( $\varphi = 60^\circ$ ) of n-butane possesses

- (a) Plane of symmetry; and is achiral                      (b)  $C_2$ -axis of symmetry; and is chiral  
(c) Centre of symmetry; and is achiral                      (d) Plane of symmetry; and is chiral

Q.72 Among the following compounds, the one which has highest dipole moment is



Q.73 The most stable conformations of 1, 2-difluoroethane and dl-2, 3-butanediol are



Q.74 The absolute configuration at the two chiral centres of (–)-camphor is:



- (a) 1R, 4R      (b) 1R, 4S      (c) 1S, 4R      (d) 1S, 4S

Q.75 The osazone A could be obtained from



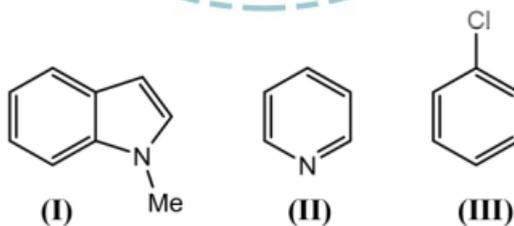


- (a) Molecule is chiral and possesses a chiral plane.  
 (b) Molecule is chiral and possesses a chiral axis.  
 (c) Molecule is achiral as it possesses a plane of symmetry.  
 (d) Molecule is achiral as it possesses a centre of symmetry.

Q.79 The major product formed in the following reaction is



Q.80 The correct order for the rates of electrophilic aromatic substitution of the following compound is

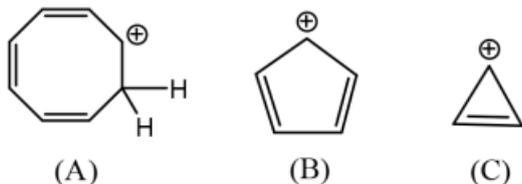


- (a) I > II > III      (b) II > I > III      (c) III > II > I      (d) I > III > II

Q.81 In the most stable conformation of trans-1-t-butyl-3-methylcyclohexane, the substituents at C-1 and C-3, respectively, are

- (a) Axial and equatorial (b) Equatorial and equatorial  
 (c) Equatorial and axial (d) Axial and axial

Q.82 Among the carbocations given below



- (a) A is homoaromatic, B is antiaromatic and C is aromatic.  
 (b) A is aromatic, B is antiaromatic and C is homoaromatic.  
 (c) A is antiaromatic, B is aromatic and C is homoaromatic.  
 (d) A is homoaromatic, B is aromatic and C is antiaromatic.

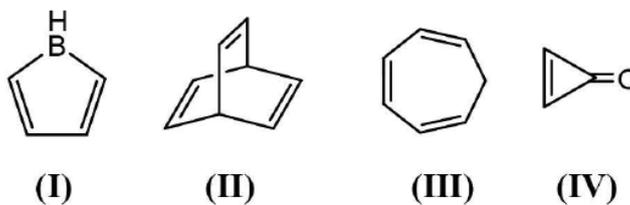
Q.83 Addition of  $\text{BH}_3$  to a carbon-carbon double bond is:

- (a) Anti-Markonikov syn addition (b) Anti-Markonikov anti addition  
 (c) Markonikov syn addition (d) Markovnikov anti addition

Q.84 The configurations of carbon atoms  $\text{C}_3$  and  $\text{C}_4$  in D-ribose, respectively, are

- (a) R and S (b) S and R (c) R and R (d) S and S

Q.85 The compound that is antiaromatic is



- (a) I (b) II (c) III (d) IV

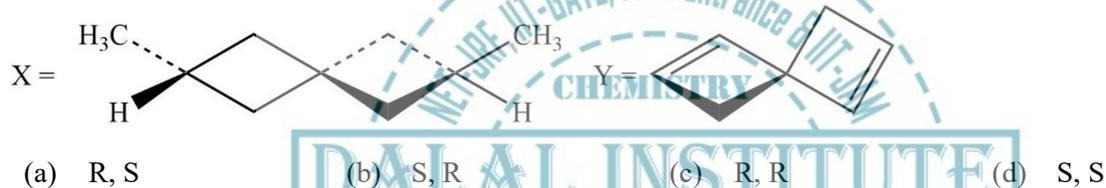
Q.86 The Dipole moment of (i)  $\text{CH}_3\text{-CH}_3$  (ii)  $\text{CH}_3\text{-NH}_2$  (iii)  $\text{CH}_3\text{-OH}$  (iv)  $\text{CH}_3\text{-F}$  follows the order:

- (a)  $1 > 2 > 3 > 4$       (b)  $3 > 2 > 1 > 4$       (c)  $4 > 3 > 2 > 1$       (d)  $1 > 4 > 2 > 3$

Q.87 A phase transfer catalyst is a substance that:

- (a) Mediate transport of ions from one phase to another.  
 (b) Traps ions.  
 (c) Carry organometallic catalytic site.  
 (d) Effect equilibrium constant.

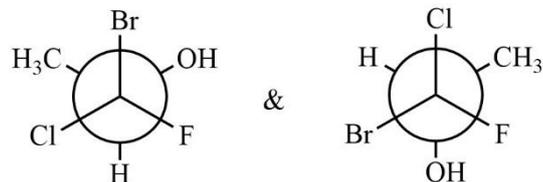
Q.88 The absolute configuration for the compound X and Y respectively are:



Q.89 Isomers which have same structural formula but different in relative spatial arrangements of atoms or groups around the double bond are called as?

- (a) Optical isomers.      (b) Geometrical isomers.  
 (c) Structural isomers.      (d) None

Q.90 The following pair is:



- (a) Diastereomers      (b) Enantiomers      (c) Identical      (d) None

Q.91 Which is a strong base?

- (a) Aniline                      (b) Cyclohexane                      (c) Pyrrole                      (d) Quinoline

Q.92 Which is right order of nucleophilicity?

- (a)  $CH_3 - CH_2^\ominus > NH_2^\ominus > CH \equiv C^\ominus > HO^\ominus$       (b)  $CH \equiv C^\ominus > NH_2^\ominus > CH_3 - CH_2^\ominus > HO^\ominus$   
 (c)  $HO^\ominus > NH_2^\ominus > CH \equiv C^\ominus > CH_3 - CH_2^\ominus$       (d)  $NH_2^\ominus > CH \equiv C^\ominus > HO^\ominus > CH_3 - CH_2^\ominus$

Q.93 Which one of the following is correctly matched:

- (a)  $CH_3-CH_2-CH_2-N^+(CH_3)_3$ ,  $E_2$  reaction.                      (b)  $CH_3-CH_2-CH_2-OH$ ,  $E_1$  reaction.  
 (c)  $CH_3-CH_2-CH_2-S^+(CH_3)_2$ ,  $E_1$  reaction.                      (d)  $\begin{matrix} CH_3 \\ | \\ H_3C-C-OH \\ | \\ CH_3 \end{matrix}$ ,  $E_2$  reaction.

Q.94 The given reaction is an example of:



- (a) Perkin reaction.                      (b) Reimer – Tiemann reaction.  
 (c) Friedel – Craft reaction.                      (d) Grignard reaction.

Q.95 Number of double present in Quinoline?

- (a) 3                      (b) 5                      (c) 4                      (d) 6

Q.96 The sequence of an mRNA molecule produced from a DNA template strand with the composition 5'-AGCTACACT-3' is

- (a) 5'-AGUGUAGCU-3'                      (b) 5'-UCGAUGUGA-3'  
 (c) 5'-AGTG TAGCT-3'                      (d) 5'-TCGATGTGA-3'

Q.97 Total no of amino acids found is?

- (a) 17                      (b) 19                      (c) 20                      (d) 21

Q.98 The ground state term symbol for  $O_2^+$  ion is?

- (a)  $3\Sigma_g^+$                       (b)  $2\Pi_g$                       (c)  $1\Pi_g$                       (d)  $3\Sigma_u^-$

Q.99 The spin state of the electron at the instant of excitation?

- (a) Changes                      (b) Remain same                      (c) May or may not change                      (d) None

Q.100 The value for  $\lambda_{max}$  for the following compound is?



- (a) 263 nm                      (b) 273 nm                      (c) 234 nm                      (d) 224 nm

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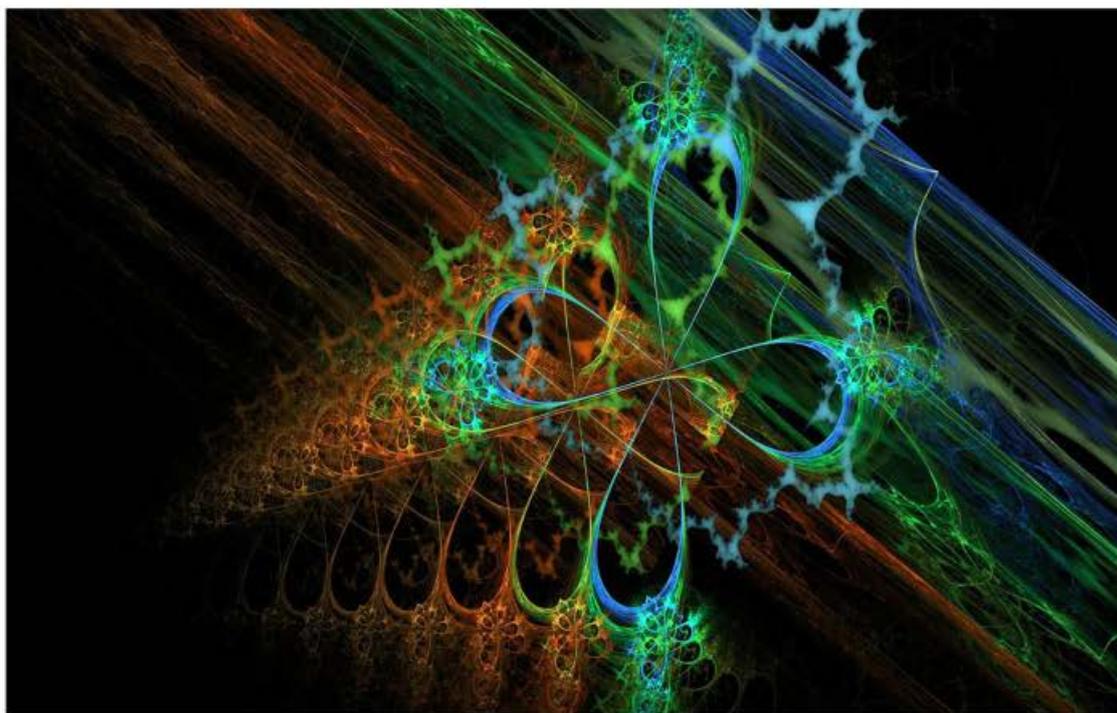
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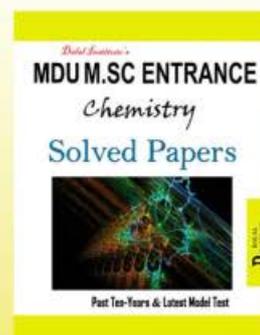
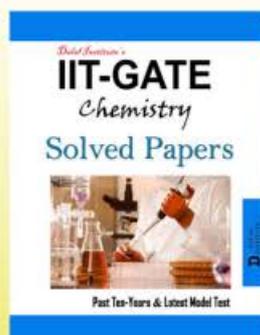
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