NEET-2020 Model Paper-1

Chemistry

1) The E^0 values of the following reduction reactions are given

$Fe^{3+}_{(aq)} + e^- \rightarrow Fe^{2+}_{(aq)} E^0 = 0.771V$

$Fe^{2+}_{(aq)} + 2e^- \rightarrow Fe_{(s)} E^0 = -0.447V$

Then the free energy change for the reaction

$Fe^{3+}_{(aq)} + 3e^- \rightarrow Fe_{(S)}$ will be __ kJ/mole

1. -10.41
2. +11.87
3. -8.10
4. +18.50

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2) For a reaction A+B î products, the rate of the reaction at various concentrations are as given below.

S.No	conc of [A] mol lt^{-1}	conc of [B] mol lt^{-1}	rate [Mole lt^{-1} time $^{-1}$]
1	0.2	0.2	2
2	0.2	0.4	4
3	0.6	0.4	36

The rate law for the above reaction is:

1. $r = k[A]^2 [B]^1$
2. $r = k[A] [B]^2$
3. $r = k[A]^1 [B]^1$
4. $r = k[A]^3 [B]^0$

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3) Among the following complexes the one which shows zero crystal field stabilizing energy is:

1. $[CoF_6]^{3-}$
2. $[Fe(CN)_6]^{2-}$
3. $[FeF_6]^{3-}$
4. $[Cu (NH)_4]^{2+}$

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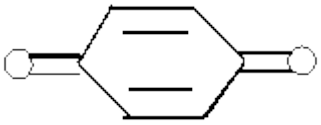
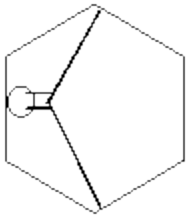
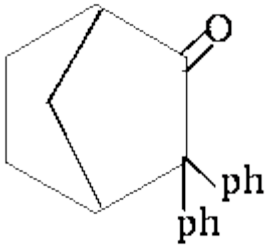
4) The product which is not obtained in the wurtz reaction of a mixture of neopentyl bromide and isobutyl bromide is __

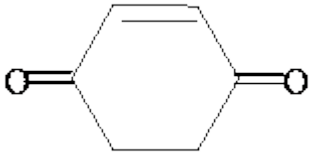
1. 2, 2 , 5, 5 - Tetramethyl hexane
2. 2, 5 - Dimethyl hexane
3. 3, 3, 5 - Trimethyl hexane
4. 2, 2, 5 - Trimethyl hexane

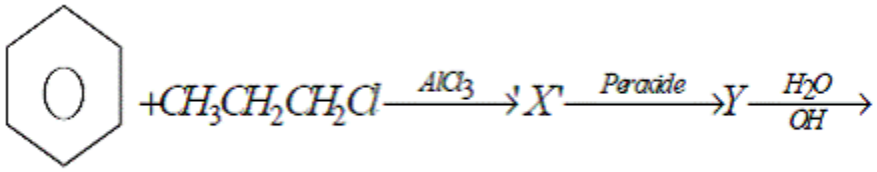
5) Which of the following molecules exhibits tautomerism?

1. 

2. 

3. 

4. 



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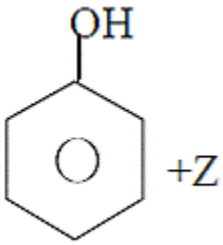

The correct statement about Z is:

1. The functional isomer of Z is propanal
2. The functional isomer of Z does not undergo aldol condensation
3. Z does not show positive iodoform test
4. Z does not undergo keto enol tautomerism

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7) The amphoteric oxide among the following is___

1. Mn_2O_7
2. V_2O_3

3. CrO
4. Cr_2O_3

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8) Which of the following statements is true?
1. During preparation of silicones the chain length of the polymer can be controlled by adding $(CH_3)_3SiCl$
2. Hydrolysis of $(CH_3)SiCl_3$ followed by condensation yields straight chain polymer
3. Basic structural unit of silicates is SiO_3^{4-}
4. ZSM-5 is used in polymerization of ethene to polythene

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9) Which of the following is AB_2E_3 type of molecule?
(B = Bond pairs and E = Lone pairs)
1. SeF_4
2. XeO_3
3. XeF_2
4. SO_2

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10) 4 moles of N_2O_4 at 300K is kept in a closed container at 1 atmosphere. It is heated upto 600K when 20% of N_2O_4 decomposes to $NO_2(g)$. The resultant pressure is ___
1. 1 atm
2. 2.4 atm
3. 1.2 atm
4. 2 atm

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11) Which of the following reactions is not a disproportionation reaction?
1. Cl_2+NaOH (cold & dil.)
2. P_4 (white) + NaOH
3. F_2+ NaOH
4. Cl + NaOH (hot and conc.)

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12) Among K^+, Ca^{2+}, S^{2-}, Cl^- the largest and smallest ion pair respectively are:
1. S^{2-}, Cl^-
2. S^{2-}, K^+
3. Ca^{2+}, Cl^-
4. S^{2-}, Ca^{2+}

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13) The enthalpy of vaporization of benzene is +35.3 kJ. Boiling point of benzene is 80°C. The entropy change of the reaction..
$C_6H_6(l) \rightleftharpoons C_6H_6(g)$ at 80°C is ___ $Jmol^{-1}k^{-1}$
1. -100
2. +100
3. -342
4. +342

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14) The value of DH for the reaction $X_2(g) + 4Y_2(g) \rightarrow 2XY_4(g)$ is more than zero, Formation of $XY_4(g)$ will be favoured at:
1. Low pressure and low temperature
2. Low pressure and high temperature
3. High pressure and High temperature
4. High pressure and low temperature

15) Which of the following hydrocarbons can decolourise Br_2 in CCl_4 and also gives a white precipitate with tollens reagent?

1. Ethene
2. 2-Butyne
3. 1- Butyne
4. Ethane

16) The cell constant of a conductivity cell is 0.6 cm^{-1}. Resistance of the cell filled with 0.01 M KCl solution is 300 ohms at 25°C. Then the equivalent conductance of the given solution is ___ $\Omega^1\ cm^2\ eq^{-1}$

1. 220
2. 200
3. 300
4. 180

17) A crystalline solid has X^- ions at the corners and face centres whereas as Y^+ ions are at the body centre and edge centres of the unit cell. The simplest formula of the compound is:

1. Y_2X
2. YX_2
3. YX_3
4. YX

18) The number of oxygen atoms in 1.62 gm of calcium bicarbonate is:

1. 0.6 N_0
2. 0.06 N_0
3. 0.3 N_0
4. 0.03 N_0

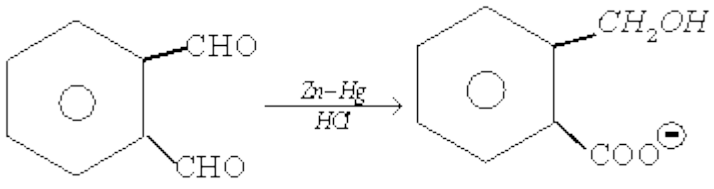
19) The volume strength of 15% W/V H_2O_2 solution is:

1. 100 Vol
2. 10 Vol
3. 50 Vol
4. 5 Vol

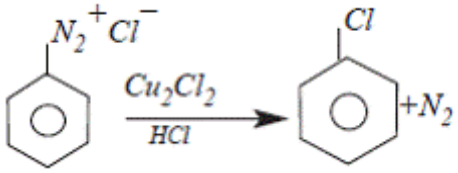
20) Which of the following is wrongly matched?

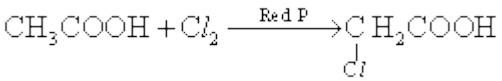
1. $CH_3CHO \xrightarrow[HCl]{Zn-Hg} C_2H_6$

- Clemmensons reduction

2. 

- Intramolecular Cannizzaro reaction

3.  - Sand Meyer reaction

4.  - Swarts reaction

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21) In Borax, the number of B-O-B links and B-OH bonds present are respectively __ and __
1. 5, 4
2. 4, 5
3. 5, 3
4. 4, 4

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22) Which of the following orders is in accordance with the property stated against it?
1. $F_2 > Cl_2 > Br_2 > I_2$
(Bond dissociation energy)
2. $F_2 > Cl_2 > Br_2 > I_2$
(Electron Affinity)
3. $HClO > HClO_2 > HClO_3 > HClO_4$ (Acidic Strength)
4. $HF > HCl > HBr > HI$
(Thermal stability)

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23) The ionization potential of Hydrogen atom is 13.6 eV. The energy required to remove an electron from He^+ ion is:
1. 54.4 eV
2. 6.8 eV
3. 13.6 eV
4. 27.2 eV

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24) Most acidic oxide of 2^{nd} period is:
1. Cl_2O_7
2. N_2O_5
3. SO_3
4. Na_2O

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25) Which one of the following aqueous solutions has the highest pH value?
1. aq NH_4Cl
2. aq CH_3COONH_4
3. aq CH_3COONa
4. aq H_2CO_3

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26) Which of the following molecules has maximum dipole moment?
1. NH_3
2. BF_3
3. NF_3
4. $BeCl_2$

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27) The orbital angular momentum of 3d electron is:

1. $\frac{h}{2\pi}$
2. $\frac{2h}{\pi}$
3. $\frac{\sqrt{2}h}{2\pi}$
4. $\frac{\sqrt{6}h}{2\pi}$

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28) The diamagnetic and neutral oxide of nitrogen is:
1. NO
2. NO_2
3. $N2O_3$
4. N_2O

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29) Which of the following pairs of metals is purified by Van Arkel method?
1. Zn and Ni
2. Ga and In
3. Zr and Ti
4. Ag and Au

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30) Adsorption is accompanied by:
1. Decrease in entropy and increase in enthalpy
2. No change in entropy and enthalpy
3. Decrease in both entropy and enthalpy
4. Increase in both entropy and enthalpy

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31) The carbohydrate that yields glucose and galactose in acid hydrolysis is:
1. Sucrose
2. Lactose
3. Maltose
4. Starch

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32) Identify 'D' in the following sequence of reactions.

$$C_2H_5OH \xrightarrow[H^{\oplus}]{KMnO_4} A \xrightarrow{NH_3} B \xrightarrow{\Delta} C \xrightarrow[Br_2/\Delta]{KOH} D$$

1. $C_2H_5NH_2$
2. CH_3NH_2
3. $C_2H_5CONH_2$
4. CH_3CONH_2

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33) The correct decreasing order of basic strength of following amines $C_2H_5NH_2$, NH_3, $(C_2H_5)_2NH$, $C_6H_5NH_2$ in gaseous state is:
1. $(C_2H_5)_2NH > C_2H_5NH_2 > NH_3 > C_6H_5NH_2$
2. $(C_2H_5)_2NH > C_2H_5NH_2 > (C_6H_5NH_2)_2NH > NH_3$
3. $(C_2H_5)_2NH > NH_3 > C_6H_5NH_2 > C_2H_5NH_2$

4. $NH_3 > C_6H_5NH_2 > (C_2H_5)_2NH > C_2H_5NH_2$

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34) Monomers of nylon 2-nylon-6 are:
1. Hexamethylene diamine and adipic acid
2. Glycine and adipic acid
3. Glycine and aminocaproic acid
4. Ethylene glycol and pthalic acid

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35) At 300K two pure liquids A and B have vapour pressures of 200 mm and 600 mm respectively. In an equimolar liquid mixture of A and B, the mole fraction of A in the vapour phase at this temperature is:
1. 0.75
2. 0.25
3. 0.4
4. 0.6

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36) The products formed on partial hydrolysis of XeF_6:
1. Xe and XeO_3
2. $XeOF_4$ and XeF_2
3. $XeOF_4$ or XeO_2F_2
4. XeF_2 and XeO_2F_2

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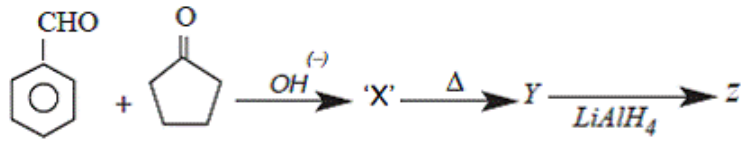
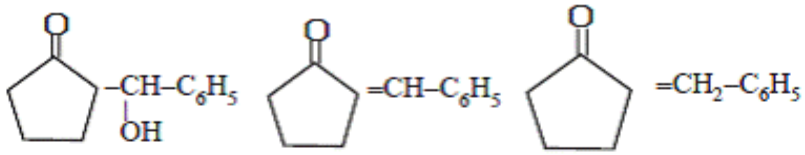
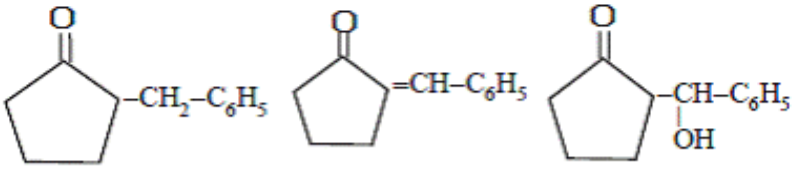
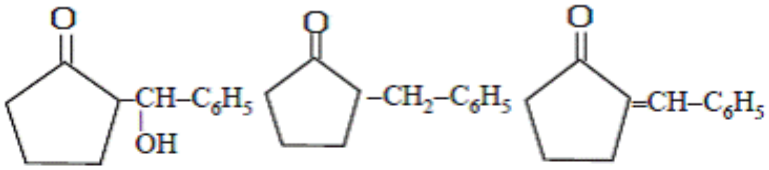
37) The products in the following reaction is:

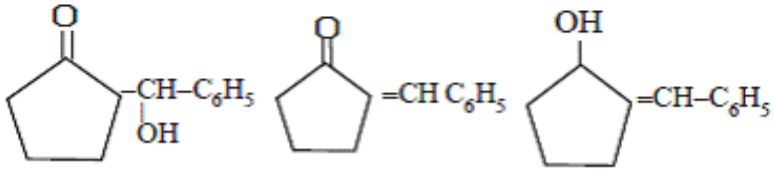


X **Y** **Z**

1) 

2) 

3) 

4) 

1. 1
2. 2
3. 3
4. 4

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38) The correct decreasing order of stability of the Carbonium ions is:

I) $C_6H_5\overset{\oplus}{C}H_2$

II) $P-(H_3CO)C_6H_4-\overset{\oplus}{C}H_2$

III) $P-NO_2-C_6H_4\overset{\oplus}{C}H_2$

IV) $P-CH_3C_6H_4\overset{\oplus}{C}H_2$

1. IV > II > I > III
2. II > IV > III > I
3. II > IV > I > III
4. IV > II > III > I

39) The ion which when present in excess in water (> 50 ppm) causes blue baby syndrome disease is:

1. NO_3^-
2. SO_4^{2-}
3. F^-
4. NO_2^-

40) The formula of the blue coloured precipitate formed in the Lassaignes test for detection of Nitrogen in an organic compound is:

1. $Fe_4\,[Fe\,(CN)_6]_3$
2. $Fe_4\,[Fe\,(CN)_6]_2$
3. $Fe_3\,[Fe\,(CN)_6]_2$
4. $Fe_3\,[Fe\,(CN)_6]_3$

41) 50 cm^3 of 0.04M K_2Cr2O_7 in acidic medium oxidises a sample of H_2S gas to S. Volume of 0.03M $KMnO_4$ required to oxidise the same amount of H_2S to S in acidic medium is:

1. 80 cm^3
2. 60 cm^3
3. 90 cm^3
4. 50 cm^3

42) At similar conditions of temperature and pressure the rate of diffusion of Hydrogen gas is $3\sqrt{3}$ times of a Hydrocarbon *x*. The molecular formula of the Hydrocarbon *x* is likely to be ____

1. C_4H_{10}
2. C_6H_6
3. C_3H_8
4. C_3H_6

43) Which of the following statements is false?

1. Micro cosmic salt is $Na(NH_4)HPO_4$
2. Thermal stability of hydrides of IA group decreases down the group
3. The solubility of IIA group sulphates increase down the group
4. Carbonates of IA group are thermally stable except Li_2CO_3

44) The bond enthalpy values of H_2= 431.37 kJ/mole, C = C is 606.10 kJ/mole, C-C is 336.49 kJ/mole, C-H is 410.50 kJ/mole. Then ΔH reaction for $C_2H_4 + H_2 \rightarrow C_2H_6$ is:

1. -120.0 kJ/mole
2. -243.6 kJ/mole
3. 1523.6 kJ/mole
4. 5530 kJ/mole

45) Ferrimagnetic substance among the following is:

1. $MgFe_2O_4$
2. MnO
3. CrO_2
4. Na_2O

NEET-1Answers

Chemistry

1) 2	2) 1	3) 3	4) 3	5) 4	6) 1	7) 4	8) 1	9) 3	10) 2	11) 3	12) 4
13) 2	14) 3	15) 3	16) 2	17) 4	18) 2	19) 3	20) 4	21) 1	22) 4	23) 1	24) 2
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