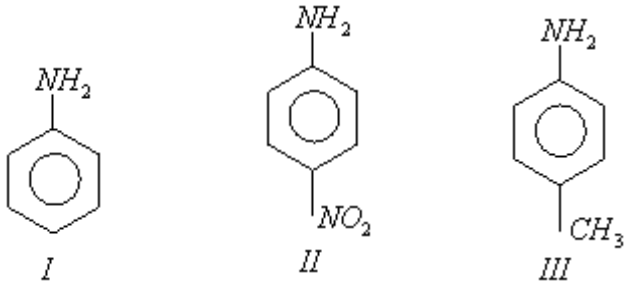
NEET-2020 Model Paper-3

Chemistry

1) The correct increasing order of basic strength for the following compounds



I II III

1. II < III<I
2. III < I < II
3. II < II < I
4. II < I < III

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2) Which of the following ores are concentrated in using wettability difference between ore and gangue particle principal?

1. Zinc Blend, and calamine
2. Iron pyraties and malachaite
3. Sphalerite and argentite
4. Copper pyraties and siderite

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3) For the complex ML_2 step wise formation constants for $M+L \rightleftharpoons ML$ $ML+L \rightleftharpoons ML_2$ are 4 and 3 respectively. Hence overall stability constant for $M+2L \rightleftharpoons ML_2$ is

1. 12
2. 7
3. 1.33
4. 0.75

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4) The density of an ionic compound (MWt=58.5) is $2.165 gcm^{-3}$ and the edge length of unit cell is 562 pm, then the closest distance between $A^- - B^-$ and rank of unit cell is

1. 281 pm, 4
2. 562pm, 2
3. 562pm, 4
4. 281pm,2

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5) In the hydrolytic equilibrium $A^- + H_2O \rightleftharpoons HA + OH^-$ $Ka = 1\times10^{-5}$. The degree of hydrolysis of a 0.001 M solution of the salt is

1. 10^{-2}
2. 10^{-3}

3. 10^{-4}
4. 10^{-5}

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6) Indentify the product of the following reactions

$I: NCl_3 + H_2O \rightarrow A + NH_3$

$II: PCl_3 + H_2O \rightarrow B + HCl$

$III: BiCl_3 + H_2O \rightarrow C + HCl$

	I	II	III
1.	$HOCl$	H_2PO_2	$BiOCl$
2.	$HOCl$	H_3PO_3	$BiOCl$
3.	N_2O_2	H_3PO_3	$BiOCl$
4.	NH_4	H_3PO_4	H_3BiO_3

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7) Which of the two have same hybridization of the central atom?

XeF_2, XeF_4 $XeO_3, XeOF_4$

1. XeF_2, XeF_4
2. XeF_4 and $XeOF_4$
3. XeF_4 and XeO_3
4. XeO_3 and $XeOF_4$

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8) Oxy acid with maximum P-H bonds is

1. Hypophosphorous acid
2. Cyclotrimeta phosphoric acid
3. Hypophosphoric acid
4. Orthophosphoric acid

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9) For the following gaseous equilibria X,Y and Z at 300K

$X: 2SO_2 + O_2 \rightleftharpoons 2SO_3$ $Y: Pcl_5 \rightleftharpoons Pcl_3 + Cl_2$ $Z: 2HI \rightleftharpoons H_2 + I_2$

Ratio of K_p and K_c in the increasing order is

1. X = Y = Z
2. X < Y < Z
3. X < Z < Y
4. Z < Y < X

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10) Borax bead on heating with cobalt oxide forms a bead of

1. $CO(BO_2)_2$
2. $COBO_3$
3. $CO_3(BO_3)_2$
4. $NO_2CO(BO_3)_2$

11) The electronic configuration of four elements are

i) $[Xe]5s^1$ ii) $4f^{14}\ 5d^1\ 6s^2$ iii) $[Ar]4s^2 4p^5$ iv) $[Ar]\ 3d^7 4s^2$

Select the incorrect match about these elements

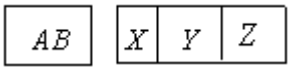
1. i- a strong reducing agent
2. ii – a d-Block elements
3. iii – high magnitude of ΔH_{eg}
4. iv – exhibit variable oxidation state

12) Some amines are given below. Arrange them in increasing order of their basic strength.

$C_2H_5-NH_2(I)$ $C_6H_5-NH_2(II)$ $C_6H_5CH_2NH_2(III)$ $(C_2H_5)_2NH(IV)$

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

13) In 2S and 2P orbitals of an element, five electrons A,B,X,Y and Z are filled such that the spins of A, X and Z are same where as spins of X and Z are opposite to the spin of B



which set(s) of electrons will have there identical quantum numbers?

1. AX, BY, BYZ
2. AB, YZ
3. AB only
4. AX, BY, XZ

14) One mole of any substance contains 6.022×10^{23} atoms / molecules. The no. of molecules of H_2SO_4 present in 100 ml of 0.02 M H_2SO_4 solution

1. 12.04×10^{23} molecules
2. 6.022×10^{23} molecules
3. 1000×10^{23} molecules
4. 12.04×10^{22} molecules

15) Correction is an electro chemical process it involves

1. loss of e^-s in Iron , $Fe\rightarrow Fe^{2\oplus}+2e^-$ ie iron act as an oxide
2. Impurities act as a cathode. Electron are used in forming hydroxyl ions $H_2O+O+2e^-\rightarrow 2OH^-$
3. Ferrous ions are oxidized to ferric ions in presence of dissolved oxygen

$2Fe^{2\oplus}+(O)+H_2O\rightarrow 2Fe^{3\oplus}+2OH^-$

4. All the above reactions

16) The dihedral angle between the H-atoms of two methyl groups in staggered conformation of ethane is

1. 120^0
2. 60^0
3. 90^0
4. 180^0

17) Aqueous NH_3 is used as a precipitating reagent for $Al^{3\oplus}$ ions as $Al(OH)_3$ rather than aqueous $NaOH$ because

1. $NH_4^{\oplus}$ is a weak base
2. $NaOH$ is a very strong base
3. $NaOH$ forms $\left[Al(OH)_4\right]^{-}$ ions
4. $NaOH$ forms $\left[Al(OH)_2\right]^{\oplus}$ ions

18) Milk is an emulsion of fat dispersed in H_2O. Stabilized by

1. casein – A lyophilic colloidal solution
2. casien – A lyophobic colloidal solution
3. Lactose – A lyophilic colloidal solution
4. Lactose – A lyophobic colloidal solution

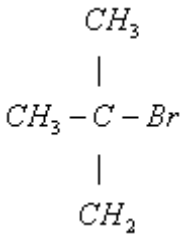
19) Nernst equation can be written as $E = E^0 - \frac{RT}{nF}\ln Q$. Q= Ke then according to Nernst equation which one is not correct?

1. $E = E^0$
2. $\frac{RT}{nF} = \ln\ K_e = E^0$
3. E= zero
4. $K_e = e\frac{nFE^0}{RT}$

20) Arrange the following compounds in the increasing order of their boiling points

1) $CH_3 - \underset{\displaystyle CH_3}{\underset{|}{CH}} - CH_2 - Br$

2) $CH_3CH_2CH_2 - CH_2 - Br$

3) 

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

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21) For which of the following system of equilibrium of constant temperature will decreasing the volume cause no shift

I : $H_{2(g)} + CO_{2(g)} \rightleftharpoons CO_{(g)} + H_2O_{(g)}$ II : $2NO_{(g)} + O_{2(g)} \rightleftharpoons 2NO_{2(g)}$

III : $H_{2(g)} + I_{2(g)} \rightleftharpoons CHI$ IV : $2NO_{2(g)} \rightleftharpoons N_2O_{4(g)}$

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

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22) $PhCH_2OPH \xrightarrow[conc\ HI]{1mole\ of}$ product. Final product is

I) $PhCH_2OH$ II) $PhCH_2I$ III) $PhOH$ IV) $Ph-I$

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

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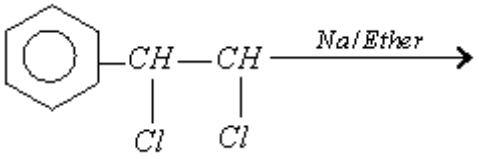
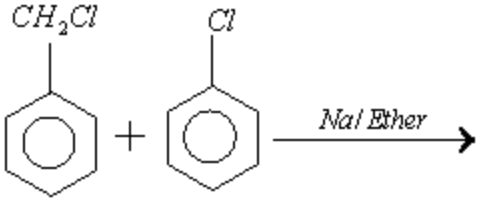
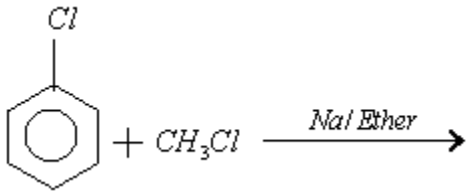
23) Which of the following is not the wurtz-fittig reaction

1. 

2. 

3. 

4. None of these

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24) Hyper conjugation is most useful for stabilizing which of the following carbonations
1. Neo pentyl
2. Tert – Butyl
3. Isopropyl
4. Ethyl

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25) The dissolution of $CaCl_2.6H_2O$ in large volume of H_2O is endothermic to the extent of $3.5K\,cal\,mol^{-1}$ for the reaction. $CaCl_{2(s)} + 6H_2O_{(s)} \rightarrow CaCl_2.6H_2O_{(s)} \Delta H = -23.2K.cal.$
Hence the heat of solution of $CaCl_2$ (on hydrous) in a large volume of H_2O is
1. 26. 7 Kcal
2. -26.7 Kcal
3. 19.7 Kcal
4. -19.7 Kcal

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26) $4f^{14}$ configuration is observed in
1. Dy and Pm
2. Lu and La
3. 4b and Lu
4. Tm and Lu

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27) Temperature and heat are
1. Extensive properties
2. Intensive properties
3. Extensive and intensive properties
4. Extensive and state functions.

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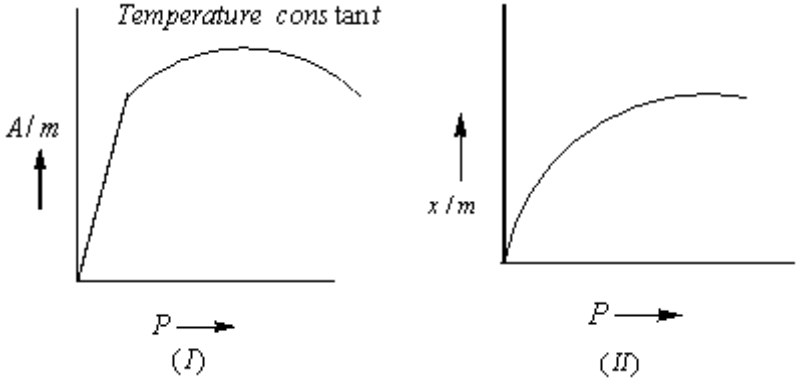
28) Observe the given graphs and mark the correct statement



1. I represents freundlich's adsorption isotherm while (II) represents langmuir's adsorption isotherm

2. I represents langmuir's adsorption isotheorem while (II) is Freundlich's adsorption isotherm
3. Both Fraundlich's and Langmuir's adsorption isotherm have been formed to be applicable in the adsorption of gases on the solids only
4. Change of pressure effects a lot and further adsorption can take place in both the isotherms.

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29) Consider

I : $FeCl_3$ in H_2O-Basic II : NH_4Cl in H_2O- Acidic

III : CH_3COONH_4 in H_2O-Acidic IV : Na_2CO_3 in H_2O- Basic

1. II, IV
2. II only
3. I, III
4. IV only

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30) List-I List-II

A) $CuSO_4.5H_2O$ I) Hydrogen bonded water

B) $BaCl_2.2H_2O$ II) Interstitial water

C) $CrCl_3.6H_2O$ III) Coordinated water

Correct match is

1. A-I B-II C-III
2. A-II B-I C-III
3. A-III B-II C-I
4. A-I B-III C-II

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31) Which of the following statements regarding sulphur is incorrect

1. S_2 molecule is paramagnetic
2. The oxidation state of sulphur is never less than +4 in its compounds.
3. The vapour at 200^0C consists of mostly of $S8$ lings
4. AT $>600^0C$ the gas mainly consists of S_2 molecules.

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32) Which of the following orders is incorrect with respect to the property indicated

1. $sp < sp^2 < sp^3$..... size
2. $sp < sp^2 < sp^3$..... bond angle
3. $sp < sp^2 < sp^3$..... energy
4. $sp < sp^2 < sp^3$..... bond lengths

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33) Which of the following statement(s) is/are correct about coordination number?

1. Most metal ions exhibit only a single characteristic C.No.
2. The C.No. is equal to the no. of ligands bonded to metal atom.
3. The C.No is determined solely by the tendency to surround the metal with the same no.of e^-s as one of the rare gases.

4. For most cations the coordination no. depends on the size, structure and charge of the ligands

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34) On the basis of information given below mark the correct option

i)in CH_3Br and C_2H_5Cl mixture intermolecular interactions of A-A and B-B are nearly same as A-B type interactions

ii)In C_2H_5OH and $CH_3-\underset{\underset{O}{\|}}{C}-CH_3$ mixture A-A (or) B-B type interacting are strongerthan A-B.

iii)In $CHCl_3$ and acetone mixture A-A (or) B-B type interacting are weaker than A-B type interactions.

1. Solution ii and iii will forms Raoult's law.
2. Solution i will follow Raoult's law.
3. Solution ii will show – Ve deviation from Raoult's law.
4. Solution iii will show +Ve deviation from Raoult's law.

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35) Buffer solutions have constant acidity and alkalinity because

1. They have fixed value of pH
2. They have large excess of H^+ and OH^- ions
3. Acids and alkalies in these solutions are shielded from attack by other ions.
4. These give un ionized acid (or) Base on reaction with added acid (or) alkali

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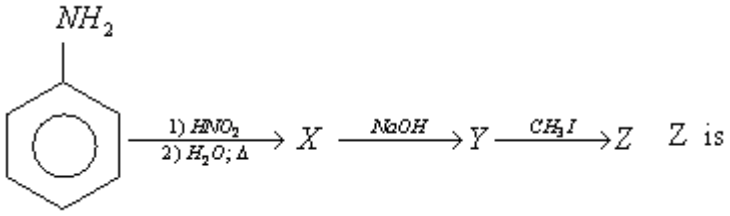
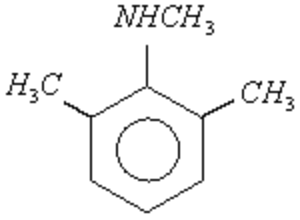
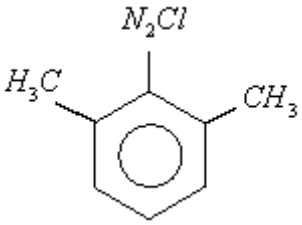
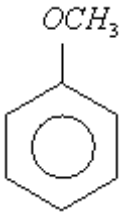
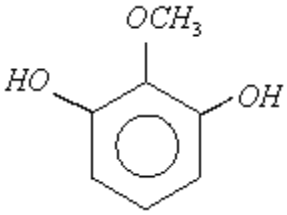
36) 

Z is

1. 

2. 

3. 

4. 

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37) P-type semiconductor is formed when
I : As impurity is mixed in Si
II : Al impurity is mixed in Si
III : B impurity is mixed in Ge
IV : P impurity is mixed in Ge
1. I & II
2. I & IV
3. II & III
4. II & IV

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38) Some properties are given below
I : IE II : E.A III : E.N IV : Covalent radius
Above which properties, with have higher values for oxygen atom than that of sulphur.
1. I, II
2. I, III
3. II, IV
4. I, IV

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39) A complex is said to exhibit following properties
i) It is heteroleptic
ii)It contains a chelate legand
iii)Exhibit octahedral geometry
iv)Dia magnetic
v)It exhibits optical isomerism
1. $\left[Co(en)_2Cl_2\right]^{\oplus}(cis)$
2. $\left[CO(en)_2Cl_2\right]^{\oplus}(Trans)$
3. $\left[Co(en)_3\right]^{3\oplus}$
4. $\left[PtCl_2(enl_2)\right]^{2\oplus}(Trans)$

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40) Which of the following harmone contains iodine?
1. Adrenaline

2. Testosterone
3. Thyroxine
4. Insulin

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41) Which one of the following oxides of N_2 with $FeSO_4$ to form a dark brown compound used in the detection of nitrate?

1. N_2O
2. NO
3. NO_2
4. N_2O_5

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42) Which of the following carbonate decomposes on heating into metal oxide and CO_2.

1. $LiCO_3,\ Na_2CO_3$
2. $Na_2CO_3,\ K_2CO_3$
3. $Li_2CO_3, MgCO_3$
4. $Na_2CO_3, MgCO_3$

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43) $2N_2O_5 \rightarrow 4NO_2 + O_2$ (g) (g) (g) is a first order reaction. The ratio of rate of decomposition N_2O_5 to rate of formation of NO_2 is

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

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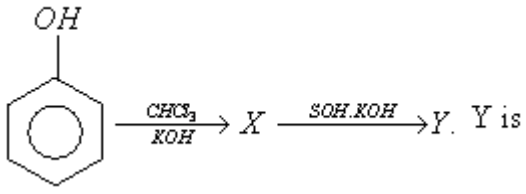
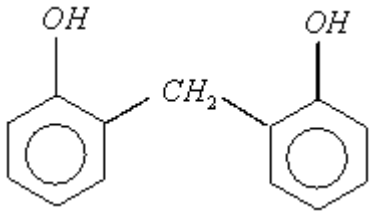
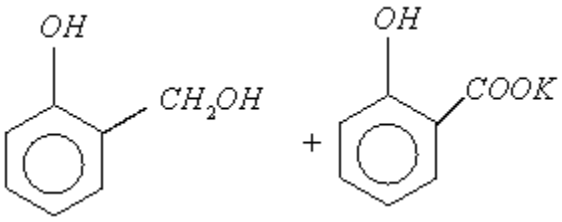
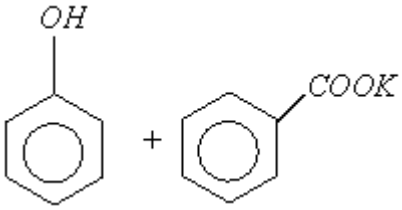
44) The final product (s) of this reaction is / are

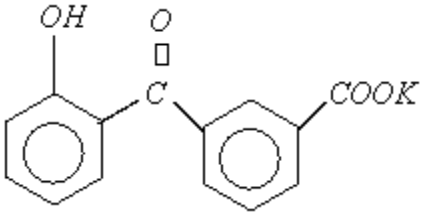


Y is

1. 

2. 

3. 

4. 

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45) An aqueous solution contains the following ions $Hg_2^{2\oplus}$ $Hg^{2\oplus}$, $Pb^{2\oplus}$ and $Cd^{2\oplus}$. Which of these will precipitate by the addition of dil HCl.

1. $Hg_2Cl_2, PbCl_2$
2. Only Hg_2Cl_2
3. Only $PbCl_2$
4. $PbCl_2, Hg_2Cl_2$

NEET-3 Answers

Chemistry

1) 4	2) 2	3) 1	4) 1	5) 2	6) 2	7) 2	8) 1	9) 3	10) 1	11) 2	12) 2
13) 3	14) 4	15) 2	16) 2	17) 3	18) 1	19) 1	20) 3	21) 3	22) 2	23) 1	24) 2
25) 4	26) 3	27) 3	28) 2	29) 3	30) 1	31) 2	32) 2	33) 4	34) 2	35) 4	36) 3
37) 3	38) 2	39) 1	40) 3	41) 2	42) 3	43) 1	44) 2	45) 1			