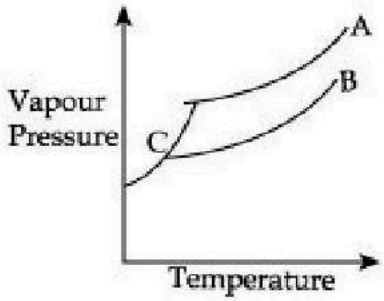
PREVIEW QUESTION BANK(Single)

Module Name : NCET Language: ENGLISH
Section Name : 306-Chemistry
Exam Date : 29-Apr-2025 Batch : 15:00-18:00

Sr. No.	Client Question ID	Question Body and Alternatives	Marks	Ne M
Section : 306-Chemistry				
Topic : Topic 86				
Q.Type : Objective Question				
1	6061	The vapour pressure of water at 298 K is 24 mm Hg. At 298 K, the vapour pressure of aqueous solution of glucose (mole fraction 0.2) is : (1) 19.2 mm Hg (2) 4.8 mm Hg (3) 24 mm Hg (4) 4.8 cm Hg (A) 1 (B) 2 (C) 3 (D) 4	4.0	
Q.Type : Objective Question				
2	6062	5.85 g of NaCl is dissolved in 1000 g of water. Freezing point of this solution will be: (Given : $K_f(H_2O) = 1.86$ K kg mol^{-1} ; molar mass in g mol^{-1} of NaCl $= 58.5$). (1) 1.86°C (2) -0.372°C (3) -0.186°C (4) 0.186°C (A) 1 (B) 2 (C) 3 (D) 4	4.0	
Q.Type : Objective Question				
3	6063		4.0	

In the diagram, the curves A, B and C, respectively represent :



(1) Solution, liquid solvent, frozen solvent
(2) Liquid solvent, solution, frozen solvent
(3) Frozen solvent, solution, liquid solvent
(4) Solution, frozen solvent, liquid solvent

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

4 | 6064 | 4.0

Choose the correct option from the following :
(1) Conductivity and molar conductivity are independent of concentration of electrolyte.
(2) Conductivity decreases with decrease in concentration for both weak and strong electrolytes.
(3) Molar conductivity decreases with decrease in concentration.
(4) The equation $\Lambda_m = \Lambda^\circ_m - Ac^{\frac{1}{2}}$ is applicable for weak electrolytes only.

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

5 | 6065 | 4.0

The amount of electricity that can deposit 127g of copper from copper sulphate solution is:
(Given : molar mass in g mol^{-1} of Cu = 63.5)
(1) 2 Coulomb
(2) 1 Ampere
(3) 2 Faraday
(4) 4 Faraday

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

6 | 6066 | 4.0

When a lead wire is placed in an aqueous copper nitrate solution (Reduction potentials : $Cu^{2+}/Cu = 0.34V$, $Pb^{2+}/Pb = -0.13V$)

(A) The mass of the lead wire increases.

(B) The intensity of blue colour of solution decreases.

(C) The intensity of the solution does not change.

(D) Cu^{2+}/Cu is a stronger reducing agent than H^+/H_2

Choose the **correct** answer from the options given below :

(1) (A) and (C) only

(2) (A) and (B) only

(3) (B) only

(4) (C) and (D) only

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

7 | 6067 | 4.0

The correct statement/s about the rate of a chemical reaction is/are :

(A) Remains constant for a zero order reaction.

(B) Gradually increases as the reaction proceeds.

(C) It is independent of temperature for reactions having zero activation energy.

(D) It increases with increase in activation energy.

Choose the **correct** answer from the options given below :

(1) (A) only

(2) (A), (B) and (C) only

(3) (C) and (D) only

(4) (A) and (C) only

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

8 | 6068 | 4.0

Identify correct statements for a zero order reaction :

(A) The rate of the reaction remains constant

(B) The concentration of the reactant remains constant

(C) The units of the rate and rate constant are same

(D) $t_{1/2}$ is inversely proportional to concentration of reactant

Choose the **correct** answer from the options given below :

(1) (A), (B) and (C) only

(2) (C) and (D) only

(3) (A) and (C) only

(4) (A) and (B) only

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

9 | 6069 | 4.0

Match **List - I** with **List - II** ($R \rightarrow P$, r_0 = initial rate).

	List - I (Order of the reaction)		**List - II (Rate after doubling the initial conentration of the reactant)**
(A)	2	(I)	$2r_0$
(B)	0	(II)	$\sqrt{2}r_0$
(C)	1	(III)	r_0
(D)	1/2	(IV)	$4r_0$

Choose the **correct** answer from the options given below :

(1) (A)-(III), (B)-(II), (C)-(I), (D)-(IV)

(2) (A)-(IV), (B)-(III), (C)-(I), (D)-(II)

(3) (A)-(II), (B)-(I), (C)-(III), (D)-(IV)

(4) (A)-(I), (B)-(IV), (C)-(II), (D)-(III)

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

10 | 6070 | 4.0

The lanthanide contraction relates to :

(1) atomic radii only

(2) atomic as well as M^{3+} ionic radii

(3) valence electrons

(4) oxidation state

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

11 | 6071 | 4.0

The correct increasing order in paramagnetic property of the ions is :

(A) Cu^{2+}

(B) V^{2+}

(C) Cr^{2+}

(D) Mn^{2+}

Choose the **correct** answer from the options given below :

(1) (A) < (B) < (C) < (D)

(2) (A) < (C) < (B) < (D)

(3) (A) < (B) < (D) < (C)

(4) (B) < (A) < (C) < (D)

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

12 | 6072 | 4.0

The complex which shows both geometrical and optical isomerism is :

(1) $[Co(NH_3)_5Cl]^{2+}$

(2) $[Cr(ox)_3]^{3-}$

(3) $[Co(en)_2Cl_2]^{+}$

(4) $[Co(NH_3)_4Cl_2]^{+}$

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

13 | 6073 | 4.0

Match **List - I** with **List - II**.

List - I (Complex/ion)		**List - II (Geometry based on VBT)**
(A) $[NiCl_4]^{2-}$	(I)	Square planar
(B) $[Ni(CN)_4]^{2-}$	(II)	Trigonal bipyramidal
(C) $Fe(CO)_5$	(III)	Octahedral
(D) $[Fe(CN)_6]^{3-}$	(IV)	Tetrahedral

Choose the **correct** answer from the options given below :

(1) (A)-(IV), (B)-(I), (C)-(III), (D)-(II)

(2) (A)-(IV), (B)-(I), (C)-(II), (D)-(III)

(3) (A)-(I), (B)-(IV), (C)-(II), (D)-(III)

(4) (A)-(IV), (B)-(III), (C)-(I), (D)-(II)

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

14 | 6074 | 4.0

Amongst $\underset{I}{[Ni(CO)_4]}$, $\underset{II}{[Ni(CN)_4]^{2-}}$ and $\underset{III}{[Ni(Cl)_4]^{2-}}$

(1) I and II are diamagnetic while III is paramagnetic
(2) I and III are diamagnetic while II is paramagnetic
(3) II and III are diamagnetic while I is paramagnetic
(4) I is diamagnetic while II are III are paramagnetic

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

15 | 6075 | 4.0

The organic halogen compound used in refrigerators and air conditioners is :
(1) CCl_4
(2) freon
(3) BHC
(4) BFC

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

16 | 6076 | 4.0

Arrange the following compounds in decreasing order of reactivity towards S_N1 reactions.
(A) $(C_6H_5)_2\ C(CH_3)Br$
(B) $C_6H_5CH_2Br$
(C) $C_6H_5CH(CH_3)Br$
(D) $(C_6H_5)_2CHBr$
Choose the **correct** answer from the options given below :
(1) (A), (B), (D), (C)
(2) (A), (D), (C), (B)
(3) (A), (C), (D), (B)
(4) (B), (C), (A), (D)

(A) 1

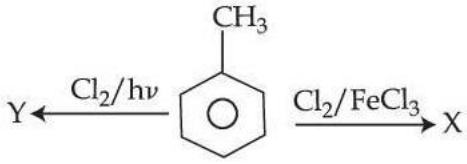
(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

17 | 6077 | 4.0



X and Y in the above reactions are respectively :

(1) Benzal chloride, *o*-Chlorotoluene

(2) m-Chlorotoluene, *p*-Chlorotoluene

(3) *o*- and *p*-Chlorotoluene, Trichloromethyl benzene

(4) Benzyl chloride, *m*-Chlorotoluene

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

18 | 6078 | 4.0

Arrange the following compounds, in increasing order of their acidic strength :

(A) *m*-Nitrophenol

(B) *m*-Cresol

(C) Phenol

(D) *m*-Chlorophenol

Choose the **correct** answer from the options given below :

(1) (B) < (C) < (A) < (D)

(2) (C) < (B) < (D) < (A)

(3) (C) < (D) < (B) < (A)

(4) (B) < (C) < (D) < (A)

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

19 | 6079 | 4.0

Match **List - I** with **List - II**.

	List - I **Name of reaction/process**		**List - II** **Reaction/Conversion/Formation**
(A)	Kolbe's reaction	(I)	Reaction of alkyl halide with sodium alkoxide
(B)	Williamson's synthesis	(II)	Conversion of phenol to *o*-hydroxy salicylic acid
(C)	Fermentation process	(III)	Conversion of phenol to salicylaldehyde
(D)	Reimer-Tiemann reaction	(IV)	Ethanol formation

Choose the **correct** answer from the options given below :

(1) (A)-(I), (B)-(III), (C)-(II), (D)-(IV)

(2) (A)-(II), (B)-(IV), (C)-(I), (D)-(III)

(3) (A)-(II), (B)-(I), (C)-(IV), (D)-(III)

(4) (A)-(I), (B)-(III), (C)-(IV), (D)-(II)

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

20 | 6080 | 4.0

Which of the following will give anisole ?
(1) Phenol is treated with $CHCl_3$ + aq NaOH
(2) Sodium phenoxide is treated with methyl iodide
(3) Cumene is oxidised in presence of air and acidic medium
(4) Methyl magnesium iodide is treated with phenol

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

21 | 6081 | 4.0

IUPAC name of Mesityl oxide is :
(1) 2-Methylcyclohexanone
(2) 4-Methylpent-3-en-2-one
(3) 2-Methylpropanal
(4) Pentan-2-one

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

22 | 6082 | 4.0

Aldehydes and ketones are reduced to primary and secondary alcohol respectively, by :
(1) Zn-Hg/HCl
(2) NH_2-NH_2/KOH
(3) $NaBH_4/H_3O^+$
(4) Anhyd. $AlCl_3$

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

23 | 6083 | 4.0

Predict the product 'C' in the following series of reactions

$$CH_3-COOH \xrightarrow{PCl_5} (A) \xrightarrow[\text{Anhyd. } AlCl_3]{C_6H_6} (B) \xrightarrow[\text{(ii) } H_3O^+]{\text{(i) } CH_3MgBr, \text{ dry ether}} (C)$$

(1) $CH_3COCH_2CH_3$
(2) $CH_3CH(OH)C_6H_5$
(3) $CH_3CH(OH)C_2H_5$
(4) $(CH_3)_2C(OH)C_6H_5$

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

24 | 6084 | 4.0

Arrange the following compounds in increasing order of their basic strengths in aqueous solution.
(A) CH_3NH_2
(B) $(CH_3)_2NH$
(C) $(CH_3)_3N$
(D) NH_3
Choose the **correct** answer from the options given below :
(1) $NH_3 < CH_3NH_2 < (CH_3)_3N < (CH_3)_2NH$
(2) $NH_3 < (CH_3)_3N < CH_3NH_2 < (CH_3)_2NH$
(3) $(CH_3)_2NH < CH_3NH_2 < (CH_3)_3N < NH_3$
(4) $(CH_3)_2NH < CH_3NH_2 < NH_3 < (CH_3)_3N$

(A) 1

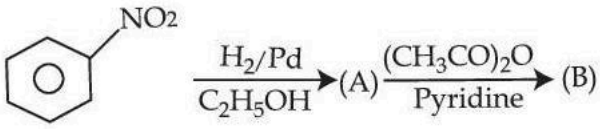
(B) 2

(C) 3

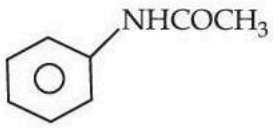
(D) 4

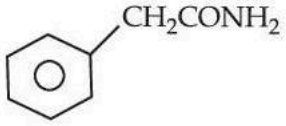
Q.Type : Objective Question

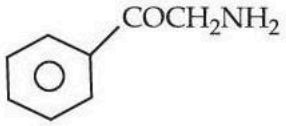
25 | 6085 | 4.0

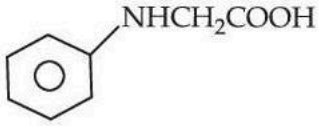


The structure of (B) is :

(1) 

(2) 

(3) 

(4) 

(A) 1

(B) 2

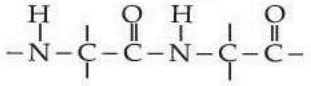
(C) 3

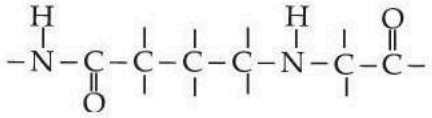
(D) 4

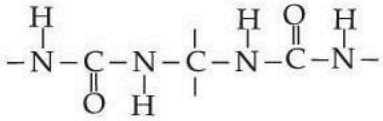
Q.Type : Objective Question

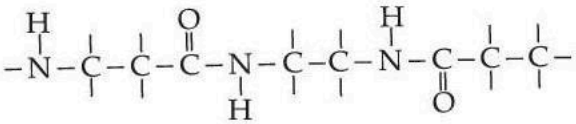
26 6086 4.0

Which of the following structure represents the peptide chain in proteins ?

(1) 

(2) 

(3) 

(4) 

(A) 1

(B) 2

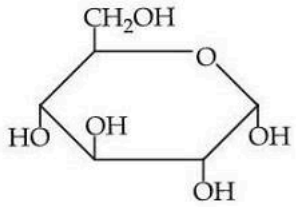
(C) 3

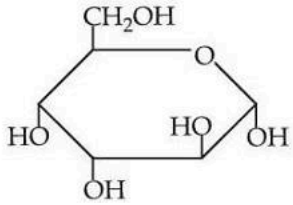
(D) 4

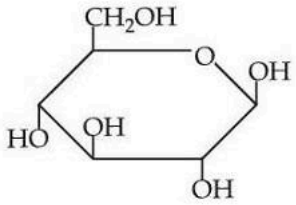
Q.Type : Objective Question

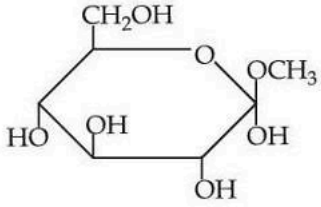
27 | 6087 | 4.0

The correct structure of α-D−(+)−glucopyranose is :

(1) 

(2) 

(3) 

(4) 

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

28 | 6088 | 4.0

Incorrect statement about DNA is _____.

(1) It has double helix structure
(2) It undergoes replication
(3) The two strands in DNA molecule are exactly similar
(4) It contains 2-deoxyribose as the pentose sugar

(A) 1

(B) 2

		(C) 3 (D) 4	