

PREVIEW QUESTION BANK(Single)

Module Name : NCET Language: ENGLISH
 Section Name : 306-Chemistry
 Exam Date : 29-Apr-2025 Batch : 09:00-12:00

Sr. No.	Client Question ID	Question Body and Alternatives	Marks	Ne M
Section : 306-Chemistry				
Topic : Topic 86				
Q.Type : Objective Question				
1	4061	Which of the following is a gaseous solution? 1. Camphor in nitrogen gas. 2. Oxygen dissolved in water. 3. Amalgam of mercury with sodium. 4. Hydrogen in palladium. (A) 1 (B) 2 (C) 3 (D) 4	4.0	1.00
Q.Type : Objective Question				
2	4062	Arrange the following 0.1 M aqueous solutions in decreasing order of their osmotic pressures. (Assume complete dissociation of salts) A. Potassium Chloride B. Glucose C. Ammonium Phosphate D. Potassium Sulphate Choose the correct answer from the options given below: 1. A, B, C, D 2. C, D, B, A 3. C, D, A, B 4. D, C, B, A (A) 1 (B) 2 (C) 3 (D) 4	4.0	1.00
Q.Type : Objective Question				
3	4063		4.0	1.00

Match the **LIST-I** with **LIST-II**

LIST-I (Expression)		LIST-II (Law/Colligative property)	
A.	$p_1 = x_1 p_1^\circ$	I.	Henry's law
B.	$p_{total} = p_1 + p_2$	II.	Relative lowering of vapour pressure
C.	$\frac{p_1^\circ - p_1}{p_1^\circ} = x_2$	III.	Raoult's law
D.	$p = K_H x$	IV.	Dalton's law

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

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

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

4	4064	The electrode reaction at anode in fuel cell is given as: 1. $2\text{H}_2(\text{g}) + 4\text{OH}^-(\text{aq}) \rightarrow 4\text{H}_2\text{O}(\text{l}) + 4\text{e}^-$ 2. $\text{O}_2(\text{g}) + 2\text{H}_2\text{O}(\text{l}) + 4\text{e}^- \rightarrow 4\text{OH}^-(\text{aq})$ 3. $2\text{H}_2(\text{g}) + \text{O}_2(\text{g}) \rightarrow 2\text{H}_2\text{O}(\text{l})$ 4. $2\text{H}^+(\text{aq}) + 2\text{e}^- \rightarrow \text{H}_2(\text{g})$ (A) 1 (B) 2 (C) 3 (D) 4	4.0	1.00
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Q.Type : Objective Question

5	4065	Λ_m° for acetic acid can be calculated using Λ_m° of strong electrolytes using the expression 1. $\Lambda_m^\circ(\text{HCl}) - \Lambda_m^\circ(\text{NaAc}) - \Lambda_m^\circ(\text{NaCl})$ 2. $\Lambda_m^\circ(\text{HCl}) + \Lambda_m^\circ(\text{NaAc}) - \Lambda_m^\circ(\text{NaCl})$ 3. $\Lambda_m^\circ(\text{NaCl}) + \Lambda_m^\circ(\text{HCl}) - \Lambda_m^\circ(\text{NaAc})$ 4. $\Lambda_m^\circ(\text{NaAc}) - \Lambda_m^\circ(\text{HCl}) - \Lambda_m^\circ(\text{NaCl})$ (A) 1 (B) 2 (C) 3	4.0	1.00
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(D) 4

Q.Type : Objective Question

6	4066	Which of the following statements are true for Daniell Cell? A. Oxidation takes place at anode. B. Cu(s) is oxidised to $\text{Cu}^{2+}(\text{aq})$ at anode. C. The flow of electrons is from anode to cathode. D. Current flows from copper half cell to zinc half cell. Choose the correct answer from the options given below: 1. A and B Only 2. A, C and D Only 3. B, C and D Only 4. B and C Only (A) 1 (B) 2 (C) 3 (D) 4	4.0	1.00
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Q.Type : Objective Question

7

4067

4.0

1.00

For the reaction $\text{A} + 2\text{B} \rightarrow \text{C}$, following observations were made at 300 K.

Expt. No.	Initial Concentration/mol L ⁻¹		Initial reaction rate/mol L ⁻¹ s ⁻¹
	[A]	[B]	
1	1.0	1.0	0.25
2	2.0	1.0	1.0
3	2.0	2.0	1.0
4	2.0	3.0	1.0

The overall order of the reaction is:

1. Zero
2. One
3. Two
4. Three

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

8	4068		4.0	1.00
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Which of the following are true for first order reactions?

- A. The unit of rate constant is $\text{mol L}^{-1}\text{s}^{-1}$.
- B. Graph of $\log \frac{[R]}{[R]_0}$ vs t is a straight line passing through origin.
- C. $t_{3/4} = 2t_{1/2}$
- D. Artificial radioactive decay of unstable nuclei follows first order kinetics.

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

- 1. (A) and (B) Only
- 2. (B) and (D) Only
- 3. (A), (B) and (C) Only
- 4. (C) and (D) Only

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

9	4069	A catalyst increases the rate of the reaction by: 1. Undergoing permanent chemical change. 2. Lowering the activation energy. 3. Altering Gibb's energy of a reaction. 4. Altering equilibrium constant of a reaction. (A) 1 (B) 2 (C) 3 (D) 4	4.0	1.00
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Q.Type : Objective Question

10	4070	_____ is used as a catalyst in Wacker process. 1. V_2O_5 2. PdCl_2 3. AgBr 4. TiCl_4 (A) 1 (B) 2 (C) 3 (D) 4	4.0	1.00
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Q.Type : Objective Question

11	4071		4.0	1.00
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Match the **LIST-I** with **LIST-II**

LIST-I (Property of first row Transition element with)		LIST-II (3d Element)	
A.	Highest melting point	I.	V
B.	Maximum oxidation states	II.	Cu
C.	Highest reduction potential ($M^{2+} \rightarrow M^0$)	III.	Cr
D.	Highest enthalpy of atomisation	IV.	Mn

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

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

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

12	4072	A metal, M forms an octahedral complex $[ML_6]^{3-}$, with ligand L having magnetic moment 4.89 BM. The correct combination of metal and ligand, respectively is: 1. Mn, Cl 2. Mn, CN 3. Fe, Cl 4. Fe, CN (A) 1 (B) 2 (C) 3 (D) 4	4.0	1.00
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Q.Type : Objective Question

13	4073	The red colour of $[Co(NH_3)_5(H_2O)]^{3+}$, is due to: 1. Ligand to metal electron donation 2. Metal to ligand electron donation 3. d-d transition 4. f-f transition (A) 1 (B) 2 (C) 3 (D) 4	4.0	1.00
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Q.Type : Objective Question

14	4074		4.0	1.00
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3 moles of silver chloride precipitates out, when the complex $\text{CoCl}_3 \cdot 6\text{NH}_3$ is treated with excess silver nitrate solution. The formula of the complex is:

1. $[\text{Co}(\text{NH}_3)_6]\text{Cl}_3$
2. $[\text{CoCl}_2(\text{NH}_3)_4]\text{Cl} \cdot \text{NH}_3$
3. $[\text{CoCl}_3(\text{NH}_3)_3](\text{NH}_3)_3$
4. $[\text{CoCl}(\text{NH}_3)_5]\text{Cl}_2 \cdot \text{NH}_3$

(A) 1

(B) 2

(C) 3

(D) 4

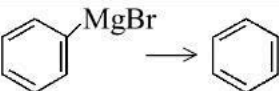
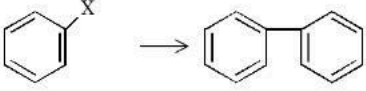
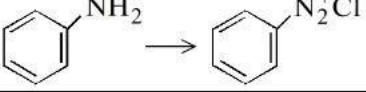
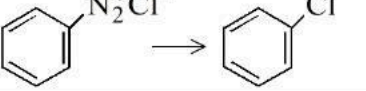
Q.Type : Objective Question

15 4075

Match the **LIST-I** with **LIST-II**

4.0

1.00

LIST-I (Reaction)		LIST-II (Reagent used)	
A.		I.	$\text{NaNO}_2 + \text{HCl} / 273-278 \text{ K}$
B.		II.	H_2O
C.		III.	Na in dry ether
D.		IV.	Cu/HCl

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

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

(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

16 4076

Freon 12 can be prepared by:

4.0

1.00

1. Sandmeyer's reaction.
2. Swarts reaction.
3. Wurtz reaction.
4. Finkelstein reaction.

(A) 1

(B) 2

(C) 3

(D) 4

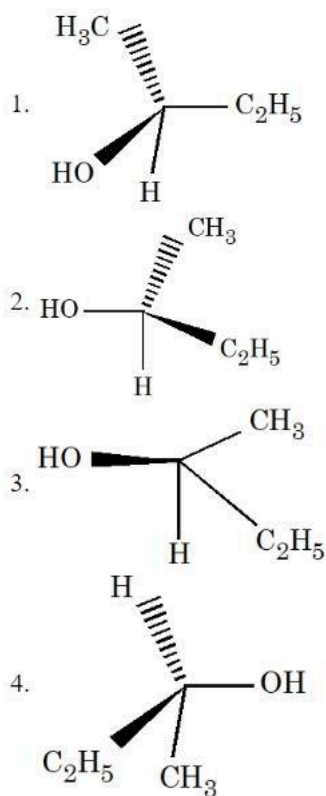
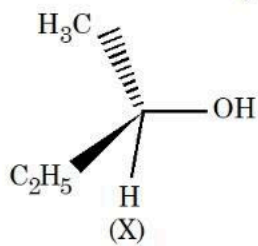
Q.Type : Objective Question

17 4077

4.0

1.00

The enantiomer of the given compound (X) is:



(A) 1

(B) 2

(C) 3

(D) 4

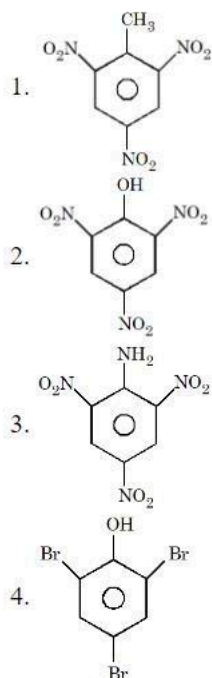
Q.Type : Objective Question

18 4078

4.0

1.00

Identify the strongest acidic compound from amongst the following:



(A) 1

(B) 2

(C) 3

(D) 4

Q.Type : Objective Question

19	4079	In Williamson's synthesis, the ether is prepared by: 1. attack of alkoxide on 1° alkyl halide (S_N1) 2. attack of alkoxide on 3° alkyl halide (S_N2) 3. attack of alkoxide on 3° alkyl halide (S_N1) 4. attack of alkoxide on 1° alkyl halide (S_N2) (A) 1 (B) 2 (C) 3 (D) 4	4.0	1.00
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Q.Type : Objective Question

20	4080	Arrange the following compounds in increasing order of their proton donating tendency: A. Propan-1-ol B. Phenol C. <i>p</i>-Cresol D. <i>p</i>-Nitrophenol Choose the correct answer from the options given below: 1. B, D, C, A 2. B, C, D, A 3. A, C, B, D 4. A, D, C, B	4.0	1.00
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		(A) 1 (B) 2 (C) 3 (D) 4		
Q.Type : Objective Question				
21	4081	The reagent diisobutylaluminium hydride is used to convert: A. Nitriles to aldehydes B. Acyl chlorides to aldehydes C. Esters to aldehydes D. Benzene to toluene Choose the correct answer from the options given below: 1. A, B & C Only 2. A & C Only 3. A & D Only 4. B & D Only (A) 1 (B) 2 (C) 3 (D) 4	4.0	1.00
Q.Type : Objective Question				
22	4082	$A \xrightarrow{H_2O / HgSO_4 + H_2SO_4} B \xrightarrow{NaBH_4} C \xrightarrow{ZnCl_2 + Conc.HCl} \text{Turbidity appear "within 5 mins."}$ The initial reactant 'A' is : 1. $CH \equiv CH$ 2. $CH_3 - C \equiv CH$ 3. $CH_2 = CH_2$ 4. $CH_3 - CH = CH_2$ (A) 1 (B) 2 (C) 3 (D) 4	4.0	1.00
Q.Type : Objective Question				
23	4083	$PhMgBr + \text{Dry ice} \xrightarrow[H_3O^+]{\text{Dry ether}} A \xrightarrow{NaOH} B \xrightarrow[\Delta]{\text{Sodalime}} C$ The final product 'C' is: 1. phenol 2. sodium benzoate 3. benzene 4. sodium phenoxide	4.0	1.00

		(A) 1		
		(B) 2		
		(C) 3		
		(D) 4		

Q.Type : Objective Question

24	4084	The correct sequence of reagents used in the conversion of benzamide to phenyl isocyanide is: 1. (i) $\text{CHCl}_3 / \text{KOH } \Delta$, (ii) $\text{Br}_2 / \text{NaOH}$ 2. (i) $\text{CHCl}_3 / \text{NaOH } \Delta$, (ii) LiAlH_4 3. (i) Br_2 / KOH, (ii) $\text{NaNO}_2 + \text{HCl}(0-5^\circ\text{C})$, CuCN 4. (i) Br_2 / KOH, (ii) $\text{CHCl}_3 / \text{KOH}, \Delta$ (A) 1 (B) 2 (C) 3 (D) 4	4.0	1.00
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Q.Type : Objective Question

25	4085	Identify 'P' and 'Q' in the following reaction sequence: $\text{C}_6\text{H}_5\text{CN} \xrightarrow{\text{Na(Hg)} / \text{C}_2\text{H}_5\text{OH}} \text{P} \xrightarrow{\text{HNO}_2(\text{aq})} \text{Q}$ 1. P = Aniline, Q = Phenol 2. P = Aniline, Q = Benzyl alcohol 3. P = Benzyl amine, Q = Phenol 4. P = Benzyl amine, Q = Benzyl alcohol (A) 1 (B) 2 (C) 3 (D) 4	4.0	1.00
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Q.Type : Objective Question

26	4086	α-D-(+)- Glucopyranose and β-D-(+)- Glucopyranose are: 1. enantiomers 2. epimers 3. anomers 4. homomers (A) 1 (B) 2 (C) 3 (D) 4	4.0	1.00
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Q.Type : Objective Question

27

4087

Match the **LIST-I** with **LIST-II**

LIST-I (Carbohydrate)		LIST-II (Hydrolysis Product)	
A.	Sucrose	I.	α -D- Glucose
B.	Maltose	II.	β -D-Glucose
C.	Lactose	III.	β -D-Galactose + β -D-Glucose
D.	Cellulose	IV.	α -D-Glucose + β -D-Fructose

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

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

(A) 1

(B) 2

(C) 3

(D) 4

4.0

1.00

Q.Type : Objective Question

28	4088	Which of the following is a non-essential amino acid? 1. Arginine 2. Lysine 3. Cysteine 4. Histidine (A) 1 (B) 2 (C) 3 (D) 4	4.0	1.00
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