

Subject: Chemistry
Set Name: V2_SET3
Code: 306
Exam Date: 18-04-2026
SLOT: 1

Question ID	264419
Question Type	MCQ
Question	Find the freezing point of the solution containing 90 g of urea (NH₂CONH₂) in 750 g of water. (Given $K_f = 1.86 \text{ K kg mol}^{-1}$) 1. 3.72 K 2. 276.87 K 3. - 3.72 K 4. 269.43
Options	
A	1
B	2
C	3
D	4

Question ID	264424												
Question Type	MCQ												
Question	Match List-I with List-II <table><thead><tr><th>List-I</th><th>List-II</th></tr></thead><tbody><tr><th>Law</th><th>Expression</th></tr><tr><td>(A) Relative lowering in vapour pressure</td><td>(I) $\frac{p_A}{p_A^\circ} = x_A$</td></tr><tr><td>(B) Henry's Law</td><td>(II) $P_{\text{total}} = p_A + p_B$</td></tr><tr><td>(C) Dalton's law of partial pressure</td><td>(III) $p = K_H x$</td></tr><tr><td>(D) Raoult's Law</td><td>(IV) $p_A^\circ x_B = p_A^\circ - p_A$</td></tr></tbody></table> Choose the correct answer from the options given below: 1. (A) - (I), (B) - (II), (C) - (III), (D) - (IV) 2. (A) - (IV), (B) - (III), (C) - (I), (D) - (II) 3. (A) - (IV), (B) - (III), (C) - (II), (D) - (I) 4. (A) - (I), (B) - (II), (C) - (IV), (D) - (III)	List-I	List-II	Law	Expression	(A) Relative lowering in vapour pressure	(I) $\frac{p_A}{p_A^\circ} = x_A$	(B) Henry's Law	(II) $P_{\text{total}} = p_A + p_B$	(C) Dalton's law of partial pressure	(III) $p = K_H x$	(D) Raoult's Law	(IV) $p_A^\circ x_B = p_A^\circ - p_A$
List-I	List-II												
Law	Expression												
(A) Relative lowering in vapour pressure	(I) $\frac{p_A}{p_A^\circ} = x_A$												
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Options													
A	1												
B	2												
C	3												
D	4												

Question ID	264427
Question Type	MCQ
Question	A cell is placed in a solution of 1.12% (mass/volume) sodium chloride. The solution is : 1. Isotonic solution 2. Hypertonic solution

3. Hypotonic solution
4. Normal saline solution

Options

A	1
B	2
C	3
D	4

Question ID 264432

Question Type MCQ

Question

Arrange the following materials in ascending order of conductivities at 25°C.

(A) 0.1M HCl

(B) Teflon

(C) Sodium

(D) Silicon

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

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

Options

A	1
B	2
C	3
D	4

Question ID 264433

Question Type MCQ

Question

Which of the following is a Leclanche cell?

1. Mercury Cell
2. Lead-storage battery
3. Dry Cell
4. Nickel-Cadmium Cell

Options

A	1
B	2
C	3
D	4

Question ID 264435

Question Type MCQ

Question

A solution of silver chloride is electrolyzed for 5 minutes with current 3.0 amperes. The mass of silver deposited at the cathode is:

(Given $F = 96500 \text{ C mol}^{-1}$, molar mass of Ag = 108 g mol^{-1})

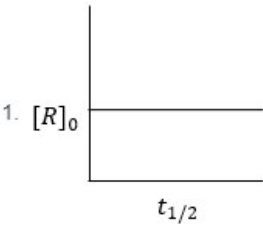
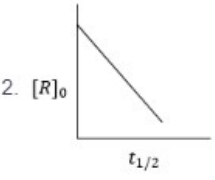
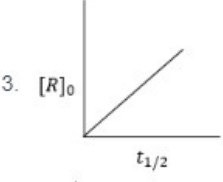
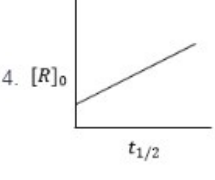
1. 0.5 g
2. 1.0 g
3. 1.5 g
4. 2.0 g

Options

A	1
B	2

C	3
D	4

Question ID	264441
Question Type	MCQ
Question	For the given reaction $2A(g) + 3B(g) \rightarrow 5C(g) + 2D(g)$, the concentration of $[A]$ decreases from 1.5 to 0.5 mol L^{-1} in 10 minutes. The rate of production of $[C]$ during this interval is: $1.5 \text{ mol L}^{-1} \text{ min}^{-1}$ $0.25 \text{ mol L}^{-1} \text{ min}^{-1}$ $1.0 \text{ mol L}^{-1} \text{ min}^{-1}$ $2.5 \text{ mol L}^{-1} \text{ min}^{-1}$
Options	
A	1
B	2
C	3
D	4

Question ID	264446
Question Type	MCQ
Question	Which of the following graphs represents the variation in half life period with initial reactant concentration for zero order reactions?    
Options	
A	1
B	2
C	3
D	4

Question ID	264450
Question Type	MCQ
	Choose the correct statement: (A) For complex reactions, order of reaction cannot be determined. (B) Inversion of cane sugar is a pseudo first order reaction.

Question	(C) Order of reaction can be zero or fractional but molecularity is whole integer.
	(D) Molecularity is applicable for both elementary and complex reactions.
	Choose the correct answer from the options given below:
	1. (A), (B) and (C) only 2. (A) and (C) only 3. (C) and (D) only 4. (B) and (C) only
Options	
A	1
B	2
C	3
D	4

Question ID	264451												
Question Type	MCQ												
Question	Match List-I with List-II												
	<table><tr><th>List-I</th><th>List-II</th></tr><tr><th>Element</th><th>Electrons in 4f orbitals</th></tr><tr><td>(A) Cerium (Z = 58)</td><td>(I) 0</td></tr><tr><td>(B) Lutetium (Z = 71)</td><td>(II) 7</td></tr><tr><td>(C) Europium (Z = 63)</td><td>(III) 1</td></tr><tr><td>(D) Lanthanum (Z = 57)</td><td>(IV) 14</td></tr></table>	List-I	List-II	Element	Electrons in 4f orbitals	(A) Cerium (Z = 58)	(I) 0	(B) Lutetium (Z = 71)	(II) 7	(C) Europium (Z = 63)	(III) 1	(D) Lanthanum (Z = 57)	(IV) 14
	List-I	List-II											
	Element	Electrons in 4f orbitals											
	(A) Cerium (Z = 58)	(I) 0											
	(B) Lutetium (Z = 71)	(II) 7											
	(C) Europium (Z = 63)	(III) 1											
(D) Lanthanum (Z = 57)	(IV) 14												
Choose the correct answer from the options given below:													
1. (A) - (III), (B) - (IV), (C) - (II), (D) - (I) 2. (A) - (I), (B) - (IV), (C) - (II), (D) - (III) 3. (A) - (III), (B) - (II), (C) - (IV), (D) - (I) 4. (A) - (I), (B) - (II), (C) - (IV), (D) - (III)													
Options													
A	1												
B	2												
C	3												
D	4												

Question ID	264452
Question Type	MCQ
Question	Which of the following statements are correct?
	(A) Permanganate ion is purple in colour with tetrahedral geometry.
	(B) Manganate ion is yellow in colour with tetrahedral geometry.
	(C) Permanganate ion is diamagnetic in nature.
Question	(D) Manganate ion is diamagnetic in nature.
	Choose the correct answer from the options given below:
	1. (B) and (D) only
	2. (A) and (C) only

1. (B) and (D) only
2. (A) and (C) only
3. (A) and (D) only
4. (B) and (C) only

Options

A	1
B	2
C	3
D	4

Question ID 264453

Question Type MCQ

Question

The highest oxidation states exhibited by Scandium and Manganese respectively, is:

1. +2 and +7
2. +3 and +7
3. +2 and +5
4. +3 and +5

Options

A	1
B	2
C	3
D	4

Question ID 264454

Question Type MCQ

Question

The complex Amminebromidochloridonitrito-N-platinate(II) exhibits:

1. Co-ordination isomerism
2. Ionization isomerism
3. Linkage isomerism
4. Solvate isomerism

Options

A	1
B	2
C	3
D	4

Question ID 264455

Question Type MCQ

Question

Identify the correct statements in relation to coordination complexes:

- (A) Central metal ion behaves as lewis acid.
- (B) The denticity of EDTA is six.
- (C) Both $\text{C}_2\text{O}_4^{2-}$ and SCN^- are chelating ligands.
- (D) Both NO_2^- and Cl^- are ambidentate ligands.

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

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

Options

A	1
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B	2
C	3
D	4

Question ID 264456
Question Type MCQ

Question

Arrange the following complexes in decreasing order of spin-only magnetic moment:

- (A) Potassium hexacyanidomanganate(III)
 (B) Hexaaquamanganese(II) ion
 (C) Potassium trioxalatoferrate(III)
 (D) Hexafluoridocobaltate(III) ion

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

- (B), (A), (D), (C)
- (C), (A), (B), (D)
- (C), (A), (D), (B)
- (B), (D), (A), (C)

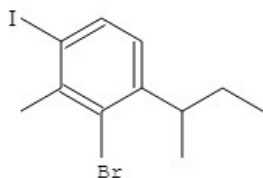
Options

A	1
B	2
C	3
D	4

Question ID 264460
Question Type MCQ

Question

The correct IUPAC name of the given structure is:



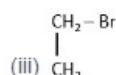
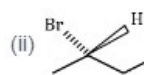
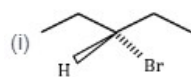
- 1-bromo-3-iodo-6-(sec-butyl)-2-methylbenzene
- 3-bromo-4-(sec-butyl)-1-iodo-2-methylbenzene
- 2-bromo-1-(sec-butyl)-4-iodo-3-methylbenzene
- 2-(1-bromo-3-iodo-2-methylphenyl)butane

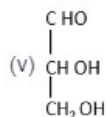
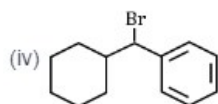
Options

A	1
B	2
C	3
D	4

Question ID 264563
Question Type MCQ

Among the following, the number of molecules which can exist as enantiomers are:





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

Options	
A	1
B	2
C	3
D	4

Question ID 264461

Question Type MCQ

Question	Which of the following reactions produce the hydrocarbon containing double the number of carbon atoms present in the halide used as reactant?
	(A) Wurtz reaction (B) Wurtz-Fittig reaction (C) Swart's reaction (D) Fittig reaction Choose the correct answer from the options given below: 1. (A) and (C) only 2. (A) and (D) only 3. (A), (B) and (D) only 4. (C) and (D) only
Options	
A	1
B	2
C	3
D	4

Question ID 264462

Question Type MCQ

Question	Which of the following reaction does not utilize sodium hydroxide?
	1. Kolbe's reaction 2. Iodoform reaction 3. Cumene hydroperoxide reaction 4. Riemer-Tiemann reaction
Options	
A	1
B	2
C	3
D	4

Question ID 264466

Question Type

MCQ

Question

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

List-I	List-II
Reaction	Product
(A) Phenol + Zn $\xrightarrow{\Delta}$	(I) Benzoquinone
(B) Phenol $\xrightarrow[\text{H}_2\text{SO}_4]{\text{Na}_2\text{Cr}_2\text{O}_7}$	(II) Salicylaldehyde
(C) Phenol $\xrightarrow{\text{Conc. HNO}_3}$	(III) Benzene
(D) Phenol $\xrightarrow{\text{CHCl}_3 + \text{NaOH}}$	(IV) Picric acid

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

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

Options

A1

B2

C3

D4

Question ID	264506
Question Type	MCQ
Question	The analgesic aspirin is prepared by:
	1. Acetylation of salicylaldehyde
	2. Friedel-craft acylation of benzoic acid
Options	3. Acetylation of salicylic acid
	4. Friedel-craft acylation of acetophenone
A	1
B	2
C	3
D	4

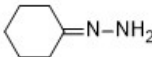
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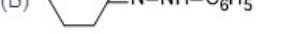
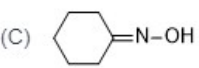
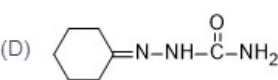
264531

Question Type

MCQ

Match List-I with List-II

List-I	List-II
Carbonyl derivative	Name
(A) 	(I) Oxime
(B) 	(II) Semicarbazone

(D) 	(II) Semicarbazone
(C) 	(III) Hydrazone
(D) 	(IV) Phenylhydrazone

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

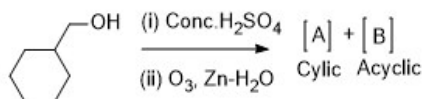
1. (A) - (III), (B) - (IV), (C) - (II), (D) - (I)
2. (A) - (III), (B) - (II), (C) - (I), (D) - (IV)
3. (A) - (I), (B) - (IV), (C) - (III), (D) - (II)
4. (A) - (III), (B) - (IV), (C) - (I), (D) - (II)

Options

A	1
B	2
C	3
D	4

Question ID 264564

Question Type MCQ



Question

For above reaction, choose the correct statement.

1. Both [A] and [B] give aldol condensation reaction.
2. Both [A] and [B] give cannizzaro reaction.
3. [A] gives aldol condensation but [B] gives cannizzaro reaction.
4. [A] gives cannizzaro but [B] gives aldol condensation reaction.

Options

A	1
B	2
C	3
D	4

Question ID 264565

Question Type MCQ

Arrange the following compounds in increasing order of acidity.

- (A) Formic acid
- (B) Fluoroacetic acid
- (C) Acetic acid
- (D) Benzoic acid

Question

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

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

Options	
A	1
B	2
C	3
D	4

Question ID264582

Question TypeMCQ

Identify the final product [P]:

Cc1ccc(NC=O)cc1
 $\xrightarrow[\text{(ii) Hinsberg's reagent}]{\text{(i) Br}_2 + \text{KOH}}$
[P]

1.

2.

3.

4.

Options	
A	1
B	2
C	3
D	4

Question ID264587

Question TypeMCQ

An alternative to Sandmeyer reaction which can be used to introduce chlorine and bromine in benzene ring is:

1. Gatterman reaction

2. Swarts reaction

3. Hell-volhard-Zelinsky reaction

4. Finkelstein reaction

Options	
A	1
B	2
C	3
D	4

Question ID264588

Question TypeMCQ

The phosphodiester linkage is present in:

1. Carbohydrates

2. Nucleic acids

3. Proteins

4. Lipids

Options	
A	1
B	2
C	3
D	4

Question ID	264591
Question Type	MCQ

Question	The INCORRECT statement in respect of carbohydrates is: 1. Sucrose cannot reduce Tollen's and Fehling's reagent. 2. Cellulose is composed of β-D-glucose. 3. α-(D)-(+)-Glucopyranose and β-D-(+)-Glucopyranose are enantiomers. 4. Both D-ribose and 2-deoxyribose are aldopentose.
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Options	
A	1
B	2
C	3
D	4