

Subject: Chemistry
Set Name: V1_Set04
Code: 306
Exam Date: 17-04-2026
SLOT: 2

Question ID	12425
Question Type	MCQ
Question	Which one of the following mixtures exhibit positive deviation from Raoult's law? 1. n-Hexane and n-heptane 2. Ethanol and acetone 3. Bromoethane and chloroethane 4. Phenol and aniline
Options	
A	1
B	2
C	3
D	4

Question ID	12428
Question Type	MCQ
Question	The boiling point of benzene is 353.23 K. When 1.80 g of a non-volatile solute was dissolved in 90 g of benzene, the boiling point is raised to 354.11 K. Calculate the molar mass of the solute. K_b for benzene is $2.53 \text{ K kg mol}^{-1}$ 1. 54.3 g mol^{-1} 2. 59.0 g mol^{-1} 3. 52.4 g mol^{-1} 4. 57.5 g mol^{-1}
Options	
A	1
B	2
C	3
D	4

Question ID	12429
Question Type	MCQ
Question	The proportionality constant, K_f in expression $\Delta T_f = K_f \times m$, is known as: A. Molal Elevation Constant B. Molal Depression Constant C. Cryoscopic Constant D. Ebullioscopic Constant E. Elevation Constant Choose the correct answer from the options given below: 1. A, D and C Only 2. B and C Only 3. B, D and E Only 4. A, B and D Only
Options	
A	1
B	2
C	3
D	4

Question ID	12430
Question Type	MCQ
Question	Which electrolyte is used in the lead storage battery? 1. The moist sodium or potassium hydroxide 2. The paste of KOH and ZnO 3. 38% solution of sulphuric acid 4. Molten NaCl
Options	
A	1
B	2
C	3
D	4

Question ID	12431
Question Type	MCQ
Question	The limiting molar conductivity (Λ°_m) values for NaCl, HCl and NaAc are 126.4, 425.9 and 91.0 S cm ² mol ⁻¹ respectively. Calculate Λ°_m for HAc. 1. 425.5 S cm ² mol ⁻¹ 2. 461.3 S cm ² mol ⁻¹ 3. 208.5 S cm ² mol ⁻¹ 4. 390.5 S cm ² mol ⁻¹
Options	
A	1
B	2
C	3
D	4

Question ID	12432
Question Type	MCQ
Question	The charges on the cation and the anion produced on the dissociation of NaCl, CaCl ₂ , MgSO ₄ respectively in the solution are 1. (+1, -1); (+2, -1); (+2, -1) 2. (+1, -1); (+2, -1); (+2, -2) 3. (+1, -1); (+2, -2); (+2, -1) 4. (+1, -1); (+1, -2); (+2, -2)
Options	
A	1
B	2
C	3
D	4

Question ID	12433
Question Type	MCQ
Question	Unit of rate of a reaction is: 1. mol L ⁻¹ 2. mol L ⁻¹ s ⁻¹ 3. mol ⁻¹ L s ⁻¹ 4. s ⁻¹
Options	
A	1
B	2

C	3
D	4

Question ID	12434
Question Type	MCQ
Question	Calculate the overall order of a reaction which has the rate expression: $\text{Rate} = k[A]^{3/2}[B]^{-1}$ 1. second order 2. half order 3. zero order 4. first order
Options	
A	1
B	2
C	3
D	4

Question ID	12437
Question Type	MCQ
Question	Which of the following statements are true? A. Molecularity can be zero or even integer. B. Order of reaction can be zero or even a fraction. C. Order of reaction is an experimental quantity. D. Molecularity cannot be zero or a non integer. E. Molecularity is applicable only for elementary reactions. Choose the correct answer from the options given below: 1. C, D and E Only 2. B, C, D and E Only 3. B and C Only 4. D and E Only
Options	
A	1
B	2
C	3
D	4

Question ID	12438
Question Type	MCQ
Question	Which of the following option is true? 1. Cr^{2+} acts as a reducing agent 2. Mn^{2+} acts as a reducing agent 3. Cr^{2+} acts as an oxidising agent 4. Cr^{3+} acts as a reducing agent
Options	
A	1
B	2
C	3
D	4

Question ID	12439
Question Type	MCQ
	Which of the following element shows positive standard electrode potential E° value?

Question	1. Cr 2. Mn 3. Ni 4. Cu
Options	
A	1
B	2
C	3
D	4

Question ID	12445
Question Type	MCQ
Question	Arrange the following actinoid metals in the increasing order of the number of oxidation states. A. Ac B. Pu C. U D. Pa E. Cm Choose the correct answer from the options given below: 1. E < A < D < B < C 2. A < E < B < D < C 3. A < E < D < B < C 4. A < E < D < C < B
Options	
A	1
B	2
C	3
D	4

Question ID	12449																				
Question Type	MCQ																				
Question	Match the LIST-I with LIST-II <table><tr><th colspan="2">LIST-I Coordination Compounds</th><th colspan="2">LIST-II Isomerism exhibited</th></tr><tr><td>A.</td><td>[Co(NH₃)₆][Cr(CN)₆]</td><td>I.</td><td>Optical</td></tr><tr><td>B.</td><td>[Co(NH₃)₅(NO₂)]Cl₂</td><td>II.</td><td>Coordination</td></tr><tr><td>C.</td><td>[Co(NH₃)₅(SO₄)]Br and [Co(NH₃)₅Br]SO₄</td><td>III.</td><td>Ionisation</td></tr><tr><td>D.</td><td>[Co(en)₃]³⁺</td><td>IV.</td><td>Linkage</td></tr></table> Choose the correct answer from the options given below: 1. A-II, B-IV, C-I, D-III 2. A-II, B-IV, C-III, D-I 3. A-IV, B-II, C-III, D-I 4. A-IV, B-I, C-III, D-II	LIST-I Coordination Compounds		LIST-II Isomerism exhibited		A.	[Co(NH ₃) ₆][Cr(CN) ₆]	I.	Optical	B.	[Co(NH ₃) ₅ (NO ₂)]Cl ₂	II.	Coordination	C.	[Co(NH ₃) ₅ (SO ₄)]Br and [Co(NH ₃) ₅ Br]SO ₄	III.	Ionisation	D.	[Co(en) ₃] ³⁺	IV.	Linkage
LIST-I Coordination Compounds		LIST-II Isomerism exhibited																			
A.	[Co(NH ₃) ₆][Cr(CN) ₆]	I.	Optical																		
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D.	[Co(en) ₃] ³⁺	IV.	Linkage																		
Options																					
A	1																				
B	2																				
C	3																				
D	4																				

Question ID	12450
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Question Type	MCQ
Question	Calculate the spin only magnetic moment of $[\text{MnBr}_4]^{2-}$: 2.9 BM 5.9 BM 3.7 BM 0
Options	
A	1
B	2
C	3
D	4

Question ID	12453
Question Type	MCQ
Question	IUPAC name of the $[\text{Ag}(\text{NH}_3)_2][\text{Ag}(\text{CN})_2]$ is- - Diamminesilver(II) dicyanidoargentate(I) - Diamminesilver(I) dicyanidoargentate(I) - Diamminesilver(I) dicyanidosilver(II) - Diammineargentato(I) dicyanidiargentate(I)
Options	
A	1
B	2
C	3
D	4

Question ID	12456																				
Question Type	MCQ																				
Question	Match the LIST-I with LIST-II																				
	<table><tr><th colspan="2">LIST-I Name Reaction</th><th colspan="2">LIST-II Product</th></tr><tr><td>A.</td><td>Swarts Reaction</td><td>I.</td><td>R-I</td></tr><tr><td>B.</td><td>Sandmeyer's Reaction</td><td>II.</td><td>C₆H₅-C₆H₅</td></tr><tr><td>C.</td><td>Fittig Reaction</td><td>III.</td><td>CH₃-F</td></tr><tr><td>D.</td><td>Finkelstein Reaction</td><td>IV.</td><td>C₆H₅-X</td></tr></table>	LIST-I Name Reaction		LIST-II Product		A.	Swarts Reaction	I.	R-I	B.	Sandmeyer's Reaction	II.	C ₆ H ₅ -C ₆ H ₅	C.	Fittig Reaction	III.	CH ₃ -F	D.	Finkelstein Reaction	IV.	C ₆ H ₅ -X
	LIST-I Name Reaction		LIST-II Product																		
	A.	Swarts Reaction	I.	R-I																	
	B.	Sandmeyer's Reaction	II.	C ₆ H ₅ -C ₆ H ₅																	
C.	Fittig Reaction	III.	CH ₃ -F																		
D.	Finkelstein Reaction	IV.	C ₆ H ₅ -X																		
Choose the correct answer from the options given below:																					
1. A-III, B-I, C-II, D-IV																					
2. A-I, B-IV, C-II, D-III																					
3. A-III, B-IV, C-II, D-I																					
4. A-III, B-IV, C-I, D-II																					
Options																					
A	1																				
B	2																				
C	3																				
D	4																				

Question ID	12458
Question Type	MCQ
	Identify the product in the following reaction $\text{CHCl}_3 + \text{O}_2 \xrightarrow{\text{light}} \text{Product}$

Question	1. CH_2Cl_2 2. HCHO 3. CCl_4 4. COCl_2
Options	
A	1
B	2
C	3
D	4

Question ID	12460
Question Type	MCQ
Question	Which of the following statement is true for given reaction? $ \begin{array}{c} \text{CH}_3 \\ \\ \text{H} \text{---} \text{C} \text{---} \text{CH}_2 \text{---} \text{OH} \\ \\ \text{CH}_2 \\ \\ \text{CH}_2 \end{array} + \text{H} \text{---} \text{Cl} \xrightarrow{\text{Heat}} \begin{array}{c} \text{CH}_3 \\ \\ \text{H} \text{---} \text{C} \text{---} \text{CH}_2 \text{---} \text{Cl} \\ \\ \text{CH}_2 \\ \\ \text{CH}_2 \end{array} + \text{H}_2\text{O} $ 1. It is an example of elimination reaction 2. Racemic product is formed 3. Configuration at asymmetric centre in the reactant and product is same 4. Inversion of configuration in the product
Options	
A	1
B	2
C	3
D	4

Question ID	12462
Question Type	MCQ
Question	Arrange the following compounds in their decreasing order of the acid strength. A. Phenol B. Benzoic Acid C. <i>p</i>-Nitrophenol D. <i>o</i>-Nitrophenol E. Ethanol Choose the correct answer from the options given below: 1. $\text{B} > \text{C} > \text{D} > \text{E} > \text{A}$ 2. $\text{D} > \text{C} > \text{B} > \text{A} > \text{E}$ 3. $\text{B} > \text{C} > \text{D} > \text{A} > \text{E}$ 4. $\text{B} > \text{D} > \text{C} > \text{A} > \text{E}$
Options	
A	1
B	2
C	3
D	4

Question ID	12464
Question Type	MCQ
Question	What product is formed when Phenol is treated with bromine water? 1. <i>o</i>-bromophenol

Question	1. <i>p</i>-bromophenol 2. 2,4,6-tribromophenol 3. <i>o</i>- and <i>p</i>- bromophenol
Options	
A	1
B	2
C	3
D	4

Question ID	12467
Question Type	MCQ
Question	Which of the following is used for the denaturation of alcohol? 1. H₂SO₄ 2. Pyridine 3. Cr₂O₃ 4. Na₂Cr₂O₇
Options	
A	1
B	2
C	3
D	4

Question ID	12468
Question Type	MCQ
Question	Give name of the reagent that can be used for transformation of allylic alcohol to propenal. 1. NaBH₄ 2. K₂Cr₂O₇ 3. PCC 4. O₃/H₂O-Zn dust
Options	
A	1
B	2
C	3
D	4

Question ID	12471
Question Type	MCQ
Question	Identify the structure and IUPAC name of the product expected from the reaction of propanone with methyl magnesium bromide followed by hydrolysis: 1. CH₃ — CH₂ — CH₂ — OH, Propan-1-ol 2. $\begin{array}{c} \text{CH}_3 - \text{CH} - \text{CH}_3 \\ \\ \text{OH} \end{array}$, Propan-2-ol 3. CH₃ — CH₂ — CH₂ — CH₂ — OH, Butan-1-ol 4. $\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_3 - \text{C} - \text{OH} \\ \\ \text{CH}_3 \end{array}$, 2-Methylpropan-2-ol
Options	
A	1
B	2
C	3

D	4
Question ID	12473
Question Type	MCQ
Question	Predict the product of the following reaction <chem>CCC(=O)c1ccccc1</chem> $\xrightarrow[\text{(ii) KOH / ethylene glycol, } \Delta]{\text{(i) NH}_2\text{NH}_2}$ [A]
Options	
A	1
B	2
C	3
D	4

Question ID	12474
Question Type	MCQ
Question	Foul smelling isocyanides are formed on heating 'X' with chloroform and ethanolic potassium hydroxide. 'X' is a - Secondary amine - Tertiary amine - Primary amine - Quaternary amine
Options	
A	1
B	2
C	3
D	4

Question ID	12475
Question Type	MCQ
	Arrange the following compound in decreasing order of the pK_b values in aqueous phase. A. $C_6H_5NH_2$

- A. $\text{C}_2\text{H}_5\text{NH}_2$
 B. $\text{C}_6\text{H}_5\text{NHCH}_3$
 C. $(\text{C}_2\text{H}_5)_2\text{NH}$
 D. $\text{C}_6\text{H}_5\text{NH}_2$
 E. NH_3

Question

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

1. $\text{D} > \text{E} > \text{B} > \text{C} > \text{A}$
2. $\text{D} > \text{B} > \text{E} > \text{A} > \text{C}$
3. $\text{D} > \text{E} > \text{B} > \text{A} > \text{C}$
4. $\text{D} > \text{E} > \text{C} > \text{B} > \text{A}$

Options

A	1
B	2
C	3
D	4

Question ID 12476

Question Type MCQ

Which of the following remain intact during denaturation of proteins?

- A. Fibrous proteins
 B. Secondary structure of proteins
 C. Tertiary structure of proteins
 D. Primary structure of proteins
 E. Quaternary structure of proteins

Question

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

1. B and D Only
2. D Only
3. C and D Only
4. B and C Only

Options

A	1
B	2
C	3
D	4

Question ID 12477

Question Type MCQ

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

LIST-I Name of Vitamins		LIST-II Deficiency Diseases	
A.	Vitamin A	I.	Cheilosis
B.	Vitamin B_{12}	II.	Increased fragility of RBCs
C.	Vitamin E	III.	Pernicious anaemia
D.	Vitamin B_2	IV.	Xerophthalmia

Question

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

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

Options

A	1
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B	2
C	3
D	4