JEE Main April 2026

Question Paper With Text Solution

06 April | Shift -1

CHEMISTRY

MATRIX

JEE Main & Advanced | XI-XII Foundation| VI-X Pre-Foundation

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JEE MAIN APRIL 2026 | 06 APRIL SHIFT-1

SECTION – A

Question ID : 6952782186

51. An oxide of iron contains 69.9% iron, its empirical formula, is:

(Given : Molar mass of Fe and O are 56 and 16 g mol^{-1} respectively.)

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(1) FeO (2) Fe_2O_3 (3) Fe_3O_4 (4) FeO_3

Ans. (2)

Sol. f

Question ID : 6952782187

52. If shortest wavelength of hydrogen atom in Lyman series is x, then longest wavelength in Balmer series of He^+ is:

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(1) $\frac{9x}{5}$ (2) $\frac{36x}{5}$ (3) $\frac{x}{4}$ (4) $\frac{5x}{9}$

Ans. (1)

Sol. f

Question ID : 6952782188

53. Match the LIST-I with LIST-II

List-I Orbital		List-II Radial nodes and nodal plane	
A.	2s	I.	1 Radial node + two nodal planes
B.	3s	II.	1 Radial node + one nodal plane
C.	3p	III.	2 Radial nodes + No nodal plane
D.	4d	IV.	1 Radial node + No nodal plane

Choose the correct answer from the options given below:

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

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

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

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

Ans. (4)

Sol. f

Question ID : 6952782189

54. The pairs among

$A=\left[SO_3^{2-}, CO_3^{2-}\right], B=\left[O_2^{2-}, F_2\right], C=\left[CN^-, CO\right], D=\left[NH_3, H_3O^+\right]$ and $E=\left[MnO_4^{2-}, CrO_4^{2-}\right]$ that do not have similar Lewis dot structure are

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(1) A, B and E (2) A and E

(3) B, C and D (4) C and D

Ans. (2)

Sol. f

Question ID : 6952782190

55. Arrange the following isothermal processes in order of the magnitude of the work (p-V) involved between states 1 and 2 .

A. Expansion in single stage w_A

B. Expansion in multi stages w_B

C. Compression in single stage w_C

D. Compression in multi stages w_D

Choose the correct option.

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(1) $|w_B|>|w_A|>|w_C|>|w_D|$

(2) $|w_C|>|w_D|>|w_A|>|w_B|$

(3) $|w_C|>|w_D|>|w_B|>|w_A|$

(4) $|w_B|>|w_A|>|w_D|>|w_C|$

Ans. (3)

Sol. f

Question ID : 6952782191

56. When 0.25 moles of a non-volatile, non-ionizable solute was dissolved in 1 mole of a solvent the vapor pressure of solution was x% of vapor pressure of pure solvent. What is x%?

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(1) 50% (2) 60% (3) 70% (4) 80%

Ans. (4)

Sol. f

Question ID : 6952782192

57. One mole each of He and A(g) are taken in a 10 L closed flask and heated to 400 K to establish the following equilibrium.

$A(g) \rightleftharpoons B(g)$

Kc for this reaction at 400 K is 4.0. The partial pressures (in atm) of He and B(g) are respectively (at equilibrium) (Assume He, A(g) and B(g) behave as ideal gases)

(Given : R=0.082 L atm$K^{-1}mol^{-1}$)

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(1) 3.28, 2.624 (2) 2.624, 3.28 (3) 3.28, 0.656 (4) 0.656, 6.56

Ans. (1)

Sol. f

Question ID : 6952782193

58. Consider the following data

Electrolyte	Λ°_m (S cm^2 mol^{-1})
$BaCl_2$	x_1
H_2SO_4	x_2
HCl	x_3

$BaSO_4$ is sparingly soluble in water. If the conductivity of the saturated $BaSO_4$ solution is x Scm^{-1} then the solubility product of $BaSO_4$ can be given as

(Here $\Lambda_m = \wedge^\circ_m$)

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(1) $\frac{10^6 x^2}{\alpha^2 (x_1 + x_2 - 2x_3)^2}$ (2) $\frac{x^2}{(x_1 + x_2 - 2x_3)^2}$

(3) $\frac{\alpha^2 (x_1 + x_2 - 2x_3)^2}{10^6 x^2}$ (4) $\frac{x^2}{(x_1 + x_2 + 2x_3)^2}$

Ans. (1)

Sol. f

Question ID : 6952782194

59. Given below are two statements:

Statement I: Aluminium is more electropositive than thallium as the standard electrode potential value of $E^{\circ}Al^{3+}/Al$ is negative and $E^{\circ}Tl^{3+}/Tl$ is positive.

Statement II: The sum of first three ionization enthalpies of boron is very high when compared to that of aluminium. Due to this reason boron forms covalent compounds only and aluminium forms Al^{3+} ion.

In the light of the above statements, choose the correct answer from the options given below

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(1) Both Statement I and Statement II are true
(2) Both Statement I and Statement II are false
(3) Statement I is true but Statement II is false
(4) Statement I is false but Statement II is true

Ans. (1)

Sol. f

Question ID : 6952782195

60. The correct statements among the following are.

A. Basic vanadium oxide is used in the manufacture of H_2SO_4.

B. The spin-only magnetic moment value of the transition metal halide employed in Ziegler-Natta polymerization is 2.84 BM .

C. The p-block metal compound employed in Ziegler-Natta polymerization has the metal in +3 oxidation state.

D. The number of electrons present in the outer most ' d ' orbital of metal halide employed in Wacker process is 8.

Choose the correct answer from the options given below

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

Ans. (3)

Sol. f

Question ID : 6952782196

61. Match the List I and List II

List-I Electronic configuration of tetrahedral metal ion		List-II Crystal Field Stabilization Energy (Δ_t)	
A.	d^2	I.	− 0.6
B.	d^4	II.	− 0.8
C.	d^6	III.	− 1.2
D.	d^8	IV.	− 0.4

Choose the correct answer from the options given below:

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

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

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

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

Ans. (3)

Sol. f

Question ID : 6952782197

62. Which of the following are true about the energy of the given d-orbitals of a tetrahedral complex?

A. $d_{xy} = d_{xz} > d_{x^2-y^2}$

B. $d_{xy} = d_{yz} > d_{z^2}$

C. $d_{x^2} - y^2 > d_z 2 > d_{xz}$

D. $d_{x^2-y^2} = d_z 2 < d_{xz}$

Choose the correct answer from the given below:

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(1) A, B and D only

(2) A and B only

(3) B and D only

(4) B, C and D only

Ans. (1)

Sol. f

Question ID : 6952782198

63. R_f value for 2-methylpropene in a solvent system (Ethyl acetate + ether) is 0.42 .
2-methylpropene is treated with dilute H_2SO_4 to give major organic product (X).
R_f value for (X) in the same solvent system under identical condition will be:
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(1) 0.42 (2) 0.82 (3) 0.62 (4) 0.12

Ans. (4)

Sol. f

Question ID : 6952782199

64. Given below are two statements:
Statement I: 2,6-diethylcyclohexanone and 6-methyl-2-n-propylcyclohexanone are metamers.
Statement II: 2,2,6,6 - tetramethylcyclohexanone exhibits keto-enol tautomerism.
In the light of the above statements, choose the correct answer from the options given below
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(1) Both Statement I and Statement II are true
(2) Both Statement I and Statement II are false
(3) Statement I is true but Statement II is false
(4) Statement I is false but Statement II is true

Ans. (3)

Sol. f

Question ID : 6952782200

65. Given below are two statements:
Statement I: Methane can be prepared by decarboxylation of sodium ethanoate, Kolbe's electrolysis of sodium acetate and reaction of CH_3MgBr with water.
Statement II: Methane cannot be prepared from unsaturated hydrocarbons and by Wurtz reaction.
In the light of the above statements, choose the correct answer from the options given below
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(1) Both Statement I and Statement II are true
(2) Both Statement I and Statement II are false
(3) Statement I is true but Statement II is false
(4) Statement I is false but Statement II is true

Ans. (4)

Sol. f

Question ID : 6952782201

66. Given below are two statements:

Statement I: 3-phenylpropene reacts with HBr and gives secondary alkyl bromide having a chiral carbon atom as the major product.

Statement II: Aryl chlorides and aryl cyanides can be prepared by Sandmeyer reaction as well as Gattermann reaction.

In the light of the above statements, choose the correct answer from the options given below

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(1) Both Statement I and Statement II are true

(2) Both Statement I and Statement II are false

(3) Statement I is true but Statement II is false

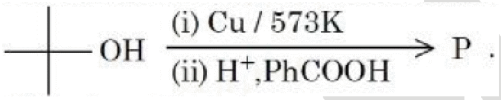
(4) Statement I is false but Statement II is true

Ans. (3)

Sol. f

Question ID : 6952782202

67. Consider the following sequence of reactions



The major product P is:

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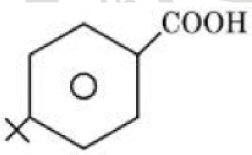
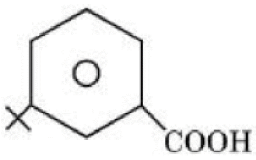
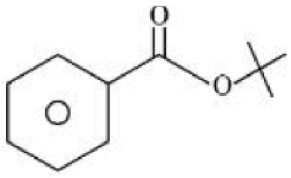
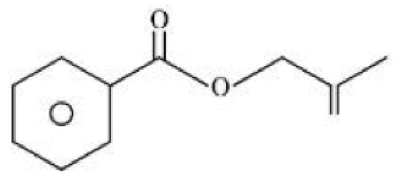
(1) 

(2) 

(3) 

(4) 

Ans. (3)

Sol. f

Question ID : 6952782203

68. Arrange the following compounds according to increasing order of boiling points.

$n-C_4H_9OH(A), n-C_4H_9NH_2(B), n-C_4H_{10}(C)$ and $C_2H_5NHC_2H_5(D)$

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

Ans. (3)

Sol. f

Question ID : 6952782204

69. Match the List I with List II

List-I Deficiency Disease		List-II Vitamin	
A.	Scurvy	I.	Pyridoxine
B.	Convulsions	II.	Vitamin A
C.	Cheilosis	III.	Ascorbic Acid
D.	Xerophthalmia	IV.	Riboflavin

Choose the correct answer from the options given below:

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

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

Ans. (3)

Sol. f

Question ID : 6952782205

70. Match the List I with List II

List-I Amino acid		List-II Positive reaction/Test for functional group present in side chain of amino acid	
A.	Glutamine	I.	Hinsberg's test
B.	Lysine	II.	Neutral $FeCl_3$ test
C.	Tyrosine	III.	Ceric ammonium nitrate test
D.	Serine	IV.	Hoffman bromamide degradation

Choose the correct answer from the options given below:

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

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

Ans. (2)

Sol. f

SECTION – B

Question ID : 6952782206

71. First and second ionization enthalpies of lithium are 520 kJ mol^{-1} and 7297 kJ mol^{-1} respectively. Energy required to convert 3.5 mg lithium (g) into Li^{2+} (g) [Li(g)Li^{2+} (g)] is _____kJ mol^{-1}. (nearest integer)

[Molar mass of Li=7 g mol^{-1}]

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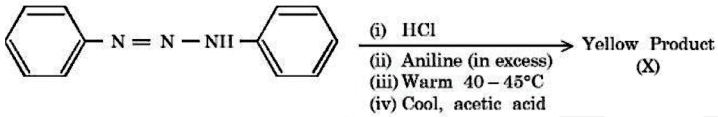
Ans. (4)

Sol. F

Question ID : 6952782207

72. Consider the following sequence of reactions.



The percentage of nitrogen in the yellow product (X) formed is (Nearest Integer)

(Given Molar mass in $gmol^{-1}$ H : 1, C : 12, N : 14)

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Ans. (21)

Sol. F

Question ID : 6952782208

73. 4.7 g of phenol is heated with Zn to give product X . If this reaction goes to 60% completion then the number of moles of compound X formed will be _____ $\times 10^{-2}$.(Nearest Integer)

(Given molar mass in g mol^{-1}: H: 1, C: 12, O: 16)

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Ans. (3)

Sol. F

Question ID : 6952782209

74. Sucrose hydrolyses in acidic medium into glucose and fructose by first order rate law with t 1 / 2 = 3 hour. The percentage of sucrose remaining after 6 hours is _____. (Nearest integer)

(Given : log 2=0.3010 and log 3=0.4771)

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Ans. (25)

Sol. F

Question ID : 6952782210

75. Consider the reaction $X \rightleftharpoons Y$ at 300 K . If ΔH^{θ} and K are $28.40\,kJ\,mol^{-1}$ and 1.8×10^{-7} at the same temperature, then the magnitude of ΔS^{θ} for the reaction in $JK^{-1}\,mol^{-1}$ is _____. (Nearest integer)

(Given : $R = 8.3\,J\,K^{-1}\,mol^{-1}, \ln 10 = 2.3, \log 3 = 0.48, \log 2 = 0.30$)

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Ans. (34)

Sol. F