CHEMISTRY NEET 2025

TEST PAPER WITH ANSWER

46. The ratio of the wavelengths of the light absorbed by a Hydrogen atom when it undergoes $n = 2 \rightarrow n = 3$ and $n = 4 \rightarrow n = 6$ transitions, respectively, is

(1) $\frac{1}{36}$ (2) $\frac{1}{16}$ (3) $\frac{1}{9}$ (4) $\frac{1}{4}$

Ans. (4)

47. Which of the following statements are true?

A. Unlike Ga that has a very high melting point, Cs has a very low melting point.

B. On Pauling scale, the electronegativity values of N and Cl are not the same.

C. Ar, K^+, Cl^-, Ca^{2+}, and S^{2-} are all isoelectronic species.

D. The correct order of the first ionization enthalpies of Na, Mg, Al, and Si is Si > Al > Mg > Na.

E. The atomic radius of Cs is greater than that of Li and Rb.

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

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

(3) C and D only (4) A, C and E only

Ans. (2)

48. Match **List I** with **List II**

	List I (Ion)		**List II (Group Number in Cation Analysis)**
A.	Co^{2+}	I.	Group-I
B.	Mg^{2+}	II.	Group-III
C.	Pb^{2+}	III.	Group-IV
D.	Al^{3+}	IV.	Group-VI

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

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

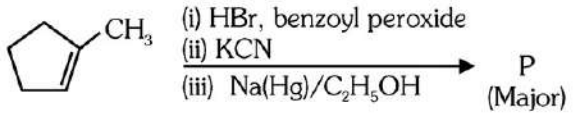
(2) A-III, B-IV, C-I, D-II

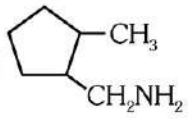
(3) A-III, B-II, C-IV, D-I

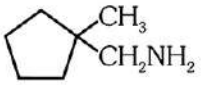
(4) A-III, B-II, C-I, D-IV

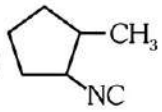
Ans. (2)

49. Predict the major product 'P' in the following sequence of reactions-



(1) 

(2) 

(3) 

(4) 

Ans. (1)

50. Energy and radius of first Bohr orbit of He^+ and Li^{2+} are

[Given $R_H = 2.18 \times 10^{-18}$ J, $a_0 = 52.9$ pm]

(1) $E_n(Li^{2+}) = -19.62 \times 10^{-18}$ J;
$r_n(Li^{2+}) = 17.6$ pm
$E_n(He^+) = -8.72 \times 10^{-18}$ J;
$r_n(He^+) = 26.4$ pm

(2) $E_n(Li^{2+}) = -8.72 \times 10^{-18}$ J;
$r_n(Li^{2+}) = 26.4$ pm
$E_n(He^+) = -19.62 \times 10^{-18}$ J;
$r_n(He^+) = 17.6$ pm

(3) $E_n(Li^{2+}) = -19.62 \times 10^{-16}$ J;
$r_n(Li^{2+}) = 17.6$ pm
$E_n(He^+) = -8.72 \times 10^{-16}$ J;
$r_n(He^+) = 26.4$ pm

(4) $E_n(Li^{2+}) = -8.72 \times 10^{-16}$ J;
$r_n(Li^{2+}) = 17.6$ pm
$E_n(He^+) = -19.62 \times 10^{-16}$ J;
$r_n(He^+) = 17.6$ pm

Ans. (1)

51. Which of the following are paramagnetic?

A. $[NiCl_4]^{2-}$ B. $Ni(CO)_4$

C. $[Ni(CN)_4]^{2-}$ D. $[Ni(H_2O)_6]^{2+}$

E. $Ni(PPh_3)_4$

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

(1) A and C only (2) B and E only

(3) A and D only (4) A, D and E only

Ans. (3)

52. Given below are two statements:

Statement I : Like nitrogen that can form ammonia, arsenic can form arsine.

Statement II : Antimony cannot form antimony pentoxide.

In the light of the above statements, choose the **most appropriate** answer from the options given below :

(1) Both Statement I and Statement II are correct

(2) Both Statement I and Statement II are incorrect

(3) Statement I is correct but Statement II is incorrect

(4) Statement I is incorrect but Statement II is correct.

Ans. (3)

53. Which among the following electronic configurations belong to main group elements?

A. $[Ne]3s^1$ B. $[Ar]3d^34s^2$

C. $[Kr]4d^{10}5s^25p^5$ D. $[Ar]3d^{10}4s^1$

E. $[Rn]5f^06d^27s^2$

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

(1) B and E only (2) A and C only

(3) D and E only (4) A, C and D only

Ans. (2)

54. Dalton's Atomic theory could not explain which of the following ?

(1) Law of conservation of mass

(2) Law of constant proportion

(3) Law of multiple proportion

(4) Law of gaseous volume

Ans. (4)

55. Consider the following compounds:

$\underline{K}O_2$, $H_2\underline{O}_2$ and $H_2\underline{S}O_4$.

The oxidation states of the underlined elements in them are, respectively,

(1) +1, –1, and +6 (2) +2, –2, and +6

(3) +1, –2, and +4 (4) +4, –4, and +6

Ans. (1)

56. If the half-life ($t_{1/2}$) for a first order reaction is 1 minutes, then the time required for 99.9% completion of the reaction is closest to:

(1) 2 minutes (2) 4 minutes

(3) 5 minutes (4) 10 minutes

Ans. (4)

57. The correct order of the wavelength of light absorbed by the following complexes is,

A. $[Co(NH_3)_6]^{3+}$ B. $[Co(CN)_6]^{3-}$

C. $[Cu(H_2O)_4]^{2+}$ D. $[Ti(H_2O)_6]^{3+}$

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

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

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

Ans. (2)

58. Which one of the following compounds can exist as cis-trans isomers ?

(1) Pent-1-ene

(2) 2-Methylhex-2-ene

(3) 1, 1-Dimethylcyclopropane

(4) 1, 2-Dimethylcyclohexane

Ans. (4)

59. Phosphoric acid ionizes in three steps with their ionization constant values

K_{a_1}, K_{a_2} and K_{a_3}, respectively,

While K is the overall ionization constant.

Which of the following statements are true ?

A. $\log K = \log K_{a_1} + \log K_{a_2} + \log K_{a_3}$

B. H_3PO_4 is a stronger acid than $H_2PO_4^-$ and HPO_4^{2-}

C. $K_{a_1} > K_{a_2} > K_{a_3}$

D. $K_{a_1} = \frac{K_{a_3} + K_{a_2}}{2}$

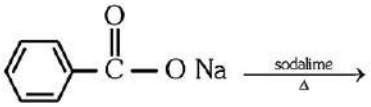
Choose the **correct** answer from the options given below:

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

(2) B, C and D only (4) A, B and C only

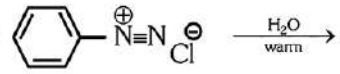
Ans. (4)

60. Which one of the following reactions does **NOT** give benzene as the product?

(1) 

(2) 

(3) 

(4) 

Ans. (4)

61. If the molar conductivity(Λ_m) of a 0.050 mol L^{-1} solution of a monobasic weak acid is 90 S cm^2 mol^{-1}, its extent (degree) of dissociation will be

[Assume $\Lambda^\circ_+ = 349.6$ S cm^2 mol^{-1} and $\Lambda^\circ_- = 50.4$ S cm^2 mol^{-1}.]

(1) 0.115 (2) 0.125

(3) 0.225 (4) 0.215

Ans. (3)

62. Given below are two statements :

Statement I : A hypothetical diatomic molecule with bond order zero is quite stable.

Statement II : As bond order increases, the bond length increase.

In the light of the above statements, choose the **most appropriate** answer from the options given below :

(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 are false

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

Ans. (2)

63. Out of the following complex compounds, which of the compound will be having the minimum conductance in solution?

(1) $[Co(NH_3)_3Cl_3]$ (2) $[Co(NH_3)_4Cl_2]$

(3) $[Co(NH_3)_6]Cl_3$ (4) $[Co(NH_3)_5Cl]Cl$

Ans. (1, 2)

64. Match **List – I** with **List – II**

	List-I		**List-II**
A.	XeO_3	I.	sp^3d, linear
B.	XeF_2	II.	sp^3; pyramidal
C.	$XeOF_4$	III.	sp^3d^3; distorted octahedral
D.	XeF_6	IV.	sp^3d^2; square pyramidal

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

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

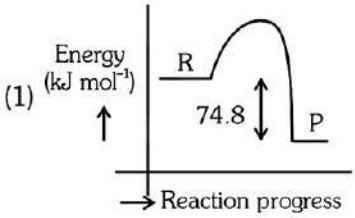
(3) A-IV, B-II, C-III, D-I (4) A-IV, B-II, C-I, D-III

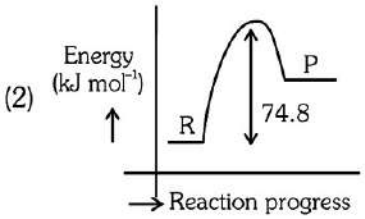
Ans. (1)

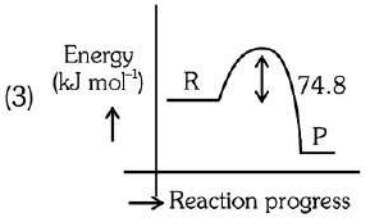
65. $C(s) + 2H_2(g) \rightarrow CH_4(g)$; $\Delta H = -74.8$ kJ mol^{-1}

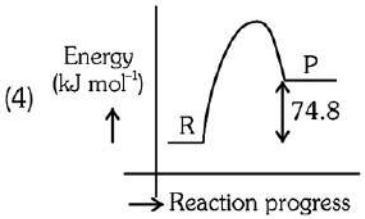
Which of the following diagrams gives an accurate representation of the above reaction?

[R → reactants; P → products]

(1) 

(2) 

(3) 

(4) 

Ans. (1)

66. Match **List – I** with **List – II**

	List-I (Example)		**List-II (Type of Solution)**
A.	Humidity	I.	Solid in solid
B.	Alloys	II.	Liquid in gas
C.	Amalgams	III.	Solid in gas
D.	Smoke	IV.	Liquid in solid

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

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

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

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

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

Ans. (2)

67. The correct order of decreasing basic strength of the given amines is :

(1) N-methylaniline > benzenamine > ethanamine > N-ethylethanamine

(2) N- ethylethanamine > ethanamine > benzenamine > N- methylaniline

(3) N- ethylethanamine > ethanamine > N- methylaniline > benzenamine

(4) benzenamine > ethanamine > N-methylaniline > N-ethylethanamine

Ans. (3)

68. Among the following choose the ones with equal number of atoms.

A. 212 g of Na_2CO_3(s) [molar mass = 106 g]

B. 248 g of Na_2O (s) [molar mass = 62 g]

C. 240 g of NaOH(s) [molar mass = 40 g]

D. 12 g of H_2(g) [molar mass = 2 g]

E. 220 g of CO_2(g) [molar mass = 44 g]

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

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

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

Ans. (2)

69. Match **List – I** with **List – II**

	List-I (Name of the Vitamin)		**List-II (Deficiency disease)**
A.	Vitamin B_{12}	I.	Cheilosis
B.	Vitamin D	II.	Convulsions
C.	Vitamin B_2	III.	Rickets
D.	Vitamin B_6	IV.	Pernicious anaemia

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

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

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

Ans. (2)

70. The correct order of decreasing acidity of the following aliphatic acids is :-

(1) $(CH_3)_3CCOOH > (CH_3)_2CHCOOH > CH_3COOH > HCOOH$

(2) $CH_3COOH > (CH_3)_2CHCOOH > (CH_3)_3CCOOH > HCOOH$

(3) $HCOOH > CH_3COOH > (CH_3)_2CHCOOH > (CH_3)_3CCOOH$

(4) $HCOOH > (CH_3)_3CCOOH > (CH_3)_2CHCOOH > CH_3COOH$

Ans. (3)

71. Given below are two statements :

Statement I : Ferromagnetism is considered as an extreme form of paramagnetism.

Statement II : The number of unpaired electrons in a Cr^{2+} ion (Z = 24) is the same as that of a Nd^{3+} ion (Z = 60).

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

(1) Both Statements I and Statement II are true

(2) Both Statement I and Statements II are false

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

(4) Statement I is false bt Statements II is true

Ans. (3)

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

	List-I (Mixture)		**List-II (Method of Separation)**
A.	$CHCl_3 + C_6H_5NH_2$	I.	Distillation under reduced pressure
B.	Crude oil in petroleum industry	II.	Steam distillation
C.	Glycerol from spent-lye	III.	Fractional distillation
D.	Aniline-water	IV.	Simple distillation

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

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

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

Ans. (1)

73. For the reaction $A(g) \rightleftharpoons 2B(g)$, the backward reaction rate constant is higher than the forward reaction rate constant by a factor of 2500, at 1000 K.

[**Given :** $R = 0.0831$ L atm mol^{-1} K^{-1}]

K_p for the reaction at 1000 K is

(1) 83.1 (2) 2.077×10^5

(3) 0.033 (4) 0.021

Ans. (3)

74. Given below are two statements :

Statement I : Benzenediazonium salt is prepared by the reaction of aniline with nitrous acid at 273-278 K. It decomposes easily in the dry state.

Statement II : Insertion of iodine into the benzene ring is difficult and hence iodobenzene is prepared through the reaction of benzenediazonium salt with KI.

In the light of the above statements, choose the **most appropriate** answer from the options given below :

(1) Both Statement I and Statement II are correct

(2) Both Statement I and Statement II are incorrect

(3) Statement I is correct but Statement II is incorrect

(4) Statement I is incorrect but Statement II is correct

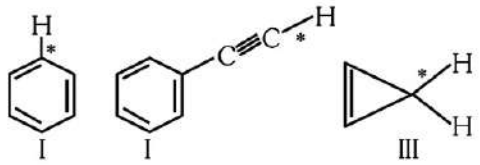
Ans. (1)

75. How many products (including stereoisomers) are expected from monochlorination of the following compound ?

(1) 2 (2) 3 (3) 5 (4) 6

Ans. (4)

76. Among the given compound I-III, the correct order of bond dissociation energy of C–H bond marked with * is :-



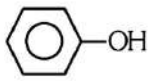
(1) II > I > III (2) I > II > III

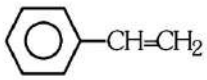
(3) III > II > I (4) II > III > I

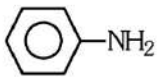
Ans. (1)

77. Which one of the following compounds **does not** decolourize bromine water ?

(1) 

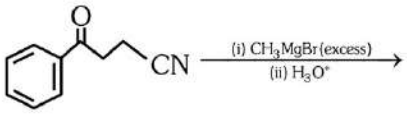
(2) 

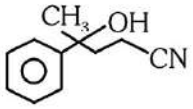
(3) 

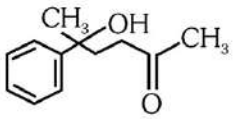
(4) 

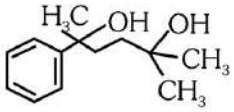
Ans. (1)

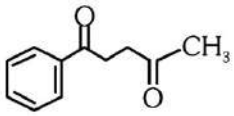
78. The major product of the following reaction is



(1) 

(2) 

(3) 

(4) 

Ans. (2)

79. Which of the following aqueous solution will exhibit highest boiling point ?

(1) 0.01 M Urea (2) 0.01 M KNO_3

(3) 0.01 M Na_2SO_4 (4) 0.015 M $C_6H_{12}O_6$

Ans. (3)

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

	List-I		**List-II**
A.	Haber process	I.	Fe catalyst
B.	Wacker oxidation	II.	$PdCl_2$
C.	Wilkinson catalyst	III.	$[(PPh_3)_3RhCl]$
D.	Ziegler catalyst	IV.	$TiCl_4$ with $Al(CH_3)_3$

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

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

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

Ans. (3)

81. 5 moles of liquid X and 10 moles of liquid Y make a solution having a vapour pressure of 70 torr. The vapour pressures of pure X and Y are 63 torr and 78 torr respectively. Which of the following is true regarding the described solution ?

(1) The solution shows positive deviation.

(2) The solution shows negative deviation.

(3) The solution is ideal.

(4) The solution has volume greater than the sum of individual volumes.

Ans. (2)

82. Sugar 'X'

A. is found in honey.

B. is a keto sugar.

C. exists in α and β - anomeric forms.

D. is laevorotatory.

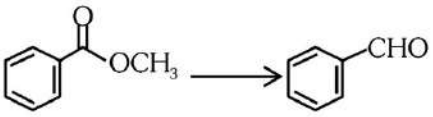
'X' is :

(1) D-Glucose (2) D-Fructose

(3) Maltose (4) Sucrose

Ans. (2)

83. Identify the suitable reagent for the following conversion



(1) (i) $LiAlH_4$, (ii) H^+/H_2O

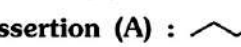
(2) (i) $AlH(iBu)_2$ (ii) H_2O

(3) (i) $NaBH_4$, (ii) H^+/H_2O

(4) H_2 / Pd-$BaSO_4$

Ans. (2)

84. Given below are two statements : one is labelled as **Assertion (A)** and the other is labelled as **Reason (R)**.

Assertion (A) :  undergoes S_N2 reaction faster than  .

Reason (R) : Iodine is a better leaving group because of its large size.

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

(1) Both **A** and **R** are true and **R** is the correct explanation of **A**.

(2) Both **A** and **R** are true but **R** is not the correct explanation of **A**.

(3) **A** is true but **R** is false

(4) **A** is false but **R** is true

Ans. (1)

85. The standard heat of formation, in kcal/mol of Ba^{2+} is :

[Given : standard heat of formation of SO_4^{2-} ion (aq) = –216 kcal/mol,

Standard heat of crystallisation of $BaSO_4(s)$ = –4.5 kcal/mol, standard heat of formation of $BaSO_4(s)$ = –349 kcal/mol]

(1) –128.5

(2) –133.0

(3) +133.0

(4) +220.5

Ans. (1)

86. Total number of possible isomers (both structural as well as stereoisomers) of cyclic ethers of molecular formula C_4H_8O is :

(1) 6 (2) 8

(3) 10 (4) 11

Ans. (3)

87. Identify the correct orders against the property mentioned

(A) $H_2O > NH_3 > CHCl_3$ – dipole moment

(B) $XeF_4 > XeO_3 > XeF_2$ – number of lone pairs on central atom

(C) O–H > C–H > N–O – bond length

(D) $N_2 > O_2 > H_2$ – bond enthalpy

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

(1) A, D only (2) B, D only

(3) A, C only (4) B, C only

Ans. (1)

88. Higher yield of NO in

$N_2(g) + O_2(g) \rightleftharpoons 2NO(g)$ can be obtained at

[ΔH of the reaction = +180.7 kJ mol^{-1}]

A. higher temperature

B. lower temperature

C. higher concentration of N_2

D. higher concentration of O_2

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

(1) A, D only (2) B, C only

(3) B, C, D only (4) A, C, D only

Ans. (4)

89. If the rate constant of a reaction is 0.03 s^{-1} , how much time does it take for 7.2 mol L^{-1} concentration of the reactant to get reduced to 0.9 mol L^{-1} ?

(Given : log 2 = 0.301)

(1) 69.3 s (2) 23.1 s

(3) 210 s (4) 21.0 s

Ans. (1)

90. Which one of the following reactions does **NOT** belong to "Lassaigne's test" ?

(1) $Na + C + N \xrightarrow{\Delta} NaCN$

(2) $2Na + S \xrightarrow{\Delta} Na_2S$

(3) $Na + X \xrightarrow{\Delta} + NaX$

(4) $2CuO + C \xrightarrow{\Delta} 2Cu + CO_2$

Ans. (4)