NARAYANA IIT-JEE/NEET/FOUNDATION | JAIPUR CENTER

46 YEARS OF EXCELLENCE

SAMPLE PAPER - 9

NEET (UG) | 2025

Duration : 3 Hrs. | Maximum Marks : 720

ANSWER KEY

Q.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ans.	1	1	2	3	1	3	1	4	4	3	3	2	1	1	1	3	4	4	2	4
Q.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ans.	2	2	4	4	1	2	3	4	1	3	1	3	1	1	1	1	3	1	1	4
Q.	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ans.	3	2	3	4	2	3	4	1	1	4	4	2	3	1	3	1	2	1	2	3
Q.	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Ans.	1	1	3	2	2	3	4	4	4	4	1	3	2	3	1	2	2	4	1	3
Q.	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Ans.	1	4	2	3	3	3	4	3	3	2	1	2	2	1	2	4	2	2	2	2
Q.	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
Ans.	3	4	3	1	2	2	1	1	4	1	1	2	4	2	2	2	3	1	3	2
Q.	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
Ans.	4	4	1	4	1	3	4	4	1	3	3	2	1	3	3	2	4	3	3	3
Q.	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
Ans.	1	1	2	2	4	1	3	3	4	1	1	2	1	3	2	2	3	3	1	1
Q.	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
Ans.	2	4	4	1	3	2	1	2	2	1	4	4	3	3	4	4	2	4	3	1

SOLUTION

PART – II : CHEMISTRY

47. 4

Sol. HVZ rxn $\rightarrow Br_2$ / Red P_4

Iodoform rxn $\rightarrow I_2$ / NaOH

Etard rxn $\rightarrow$ (i) CrO_2Cl_2, CS_2

$\rightarrow$ (ii) H_2O

Gattermann Koch rxn $\rightarrow CO, HCl, AlCl_3$ (anhy)

48. 1

Sol. $Q_C = \dfrac{[C]}{[A][B]} = \dfrac{\frac{1}{10}}{\frac{2}{10}\times\frac{3}{10}} = 1.66$

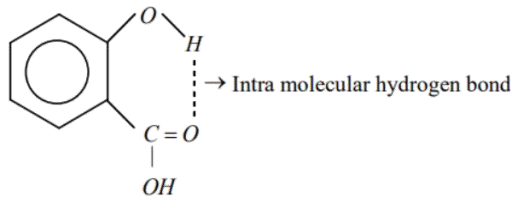
$Q_C < K_C$, the reaction will produced in forward direction.

50. 4

Sol. $\Delta ng \neq 0$

51. 4

Sol.



52. 2

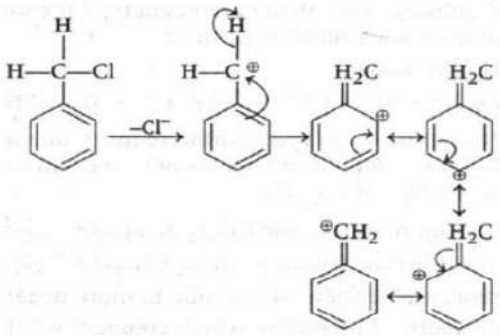
Sol. $N_{2(g)}(1atm) \rightarrow N_{2(g)}(8atm); \Delta S < 0$

54. 1

Sol. Benzyl > Allyl > Alkyl > Vinyl carbocation.

56. 1

Sol. The order of reactivity of halides for S_N1 reaction is $3^\circ > 2^\circ > 1^\circ$ as the stability of carbocation formed in S_N1 will be highest for 3° and lowest for 1°. Here, $C_6H_5CH_2Cl$ will show highest reactivity for S_N1 mechanism as the carbocation left after removel of Cl^- is resonance stablised.



So, $C_6H_5CH_2Cl$ will show highest reactivity towards S_N1 reaction.

60. 3

Sol. $E_n = E_{1(H)} \times \dfrac{z^2}{n^2}$

$= -13.6 \times \dfrac{z^2}{n^2} E_3\left(He^+\right) = -13.6 \times \dfrac{2^2}{3^2} = -6.04eV$

61. 1

Sol. $CH_2 = CH–C \equiv N\sigma = 6, \pi = 3$

62. 1

Sol. Correct boiling point order: Isobutane<Neopentane < Isopentane < Pentane

63. 3

Sol. Oxidation states possible for oxygen are

$-2, +1, +2, -1, -\dfrac{1}{2}$

64. 2

Sol. $\ln k = \ln A - \dfrac{Ea}{R}\left(\dfrac{1}{T}\right)$

$\text{Slope} = \dfrac{-Ea}{R}$

$-5 \times 10^3 = \dfrac{-Ea}{R}$

$Ea = 8.314 \times 5 \times 10^3 = 41.57 \times 10^3 \text{ J/mol}$

$= 41.57 \text{KJ/mol}$

65. 2

Sol. Critical Temperature: The temperature at which a substance can becomes liquid is called its Critical Temperature. Critical Temperature is directly proportional to liquefaction.

As the Critical Temperature is high liquefaction is high. Critical Temperature increases down the group in the noble gases.

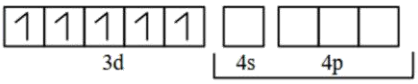
66. 3

Sol. $3 > 1 > 4 > 2$

67. 4

Sol. $(A)\left[MnBr_4\right]^{2-}\ Mn^{+2} \Rightarrow [Ar]3d^5$

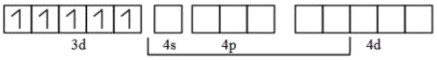
In presence of ligand field

$\Rightarrow$ [Ar] 

$\Rightarrow sp^3$ hybridization, paramagnetic in nature

(B) $\left[FeF_6\right]^{3-}\ Fe^{+3} \Rightarrow [Ar]3d^5$

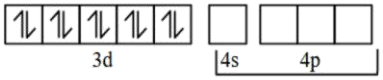
In presence of ligand field

$\Rightarrow$ [Ar] 

$\Rightarrow sp^3 d^2$ hybridization, paramagnetic in nature

(C) $\left[Co\left(C_2O_4\right)_3\right]^{3-}\ Co^{+3} \Rightarrow [Ar]3d^6$

In presence of ligand field

$\Rightarrow$ [Ar] 

$\Rightarrow sp^3$ hybridization, diamagnetic in nature

68. 4

Sol. Activated molecules should have the energy equal to (or) greater than E_T and proper orientation.

69. 4

Sol. Electronegativity increases on going from left to right in a period and decreases from top to bottom in a group. Thus electronegativity of

F > O > N > S.

70. 4

Sol. Solubility of a gas in solvent inversely proportional to K_H.

71. 1

Sol. $1 mole of\ Mno_4^-\ to\ Mn^{2+} \rightarrow 482500C$

$1 mole of\ Cr_2O_7^{2-}\ to\ cr^{3+} \rightarrow 579000C$

$1 mole of\ Sn^{4+}\ to\ sn^{2+} \rightarrow 193000C$

$1 mole of\ AI^{3+}\ to\ AI \rightarrow 289500C$

72. 3

Sol. The compound which contains $-COCH_3$ group in its structure, give positive iodoform test and the compound which contains - CHO group give positive Fehling test. In ethanol, CH_3CHO both the groups are present, hence it responds to both iodoform test and Fehling's test. Iodoform test

$CH_3CHO + I_2 + NaOH \rightarrow$

$CHI_3 + NaI + H_2O + HCOONa$

Fehling's test

$CH_3CHO + Cu\left(OH_2\right)_2 \rightarrow$

$CH_3COOH + Cu_2O\downarrow + 2H_2O$
(red ppt.)

73. 2

Sol. The magnetic moment of 1.73 BM implies that the vanadium ion has only one unpaired electron $\left(=\sqrt{n(n+2)}\mu_B\right)$. The outer electronic configuration of vanadium is $(3d)^3(4s)^2$. Thus, in the given compound vanadium exists as V^{4+} Hence, the compound is VCl^4.

74. 3

Sol.

Molecules	Hybridization	Shape
PCl_5	Sp^3d	Trigonal bipyramidal
SF_4	Sp^3d	See saw
XeF_4	Sp^3d^2	Square planar
BF_3	Sp^2	Trigonal planar

75. 1

Sol. Eq. of oxalic acid = Eq. of - NaOH

76. 2

Sol. $CH_3 - CH_2 - CH_2 - OH + SOCl_2$

$\rightarrow CH_3 - CH_2 - CH_2 - Cl + SO_2 + HCl$

$CH_3 - CH_2 - OH \xrightarrow{RedP + Br_2} CH_3 - CH_2 - Br$

77. 2

Sol. Electronic configuration of Gadolinium, with atomic number 64 is $[Xe]4f^7 5d^1 6s^2$ as half-filled orbitals are more stable.

78. 4

Sol.

$$PCl_5 \rightarrow PCl_3 + Cl_2$$

2	0	0
1.6	1.6	1.6
0.4	1.6	1.6

79. 1

Sol. The SRP for the different halogens is in the order of $F > Cl > Br > I$. Detailed explanation: SRP stands for standard reduction potential value. The higher the SRP value, the stronger the oxidizing agent due to high electron affinity, low bond energy, and small size.

Hence, the correct answer is option A) $F > Cl > Br > I$

82. 4

Sol. Order of M.P. of group 14: C > Si > Ge > Pb > Sn

Element	**M.P. (°C)**
Z = 6 = C	3730
Z = 14 = Si	1410
Z = 32 = Ge	937
$\boxed{Z = 50}$ = Sn	232
Z=82=Pb	327

83. 2

Sol. The correct match is A-I, B-III, C-IV, D-III

85. 3

Sol.

	Column I		Column II
A	Principal quantum number	IV	Energy of electron in single electron system
B	Azimuthal quantum number	III	Relative energies of various subshells
C	Magnetic quantum number	II	Number of orbitals present in any subshell
D	Spin quantum number	I	Magnetic properties of the substance

90. 2

Sol. Order of reactivity of alcohol 3° > 2° > 1°.