F.M-45*4=180

CLASS XI(NEET)-11

NAME OF STUDENT	SUBJECT	MARKS OBTAINED
	CHEMISTRY	

MOCK TEST

46. Consider the following sets of quantum numbers :

(i) n = 3 l = 0 m = 0 s = 1/2

(ii) n = 2 l = 2 m = 1 , s = 1/2

(iii) n = 4 l = 3 m = - 2 s = - 1/2

(iv) n = 1, l = 0, m = - 1 s = - 1/2

(v) n = 3 l = 2 m = 3 s = 1/2

Which of the following sets of quantum number is not possible?

(a) (i), (ii), (iii) and (iv) (b) (ii), (iv) and (v) -

(c) (i) and (iii) (d) (ii), (iii) and (iv)

47. Maximum number of electrons in a subshell of an atom is determined by the following:

(a) 2l+1 (b) 4l-2 (c) $2n^2$ (d) 4l+2

48. The orbital angular momentum of a p-electron is given as:

(a) h/$\sqrt{2}\pi$ (b) $\sqrt{3}\ h/2\pi$ (c) $\sqrt{3/2}\ \ h/\pi$ (d) $\sqrt{6}\ \ h/2\pi$

49. Match List I with List II.

List-I (Compound)	List-II (Shape/geometry)
A. NH_3	1. Trigonal Pyramidal
B. BrF_5	II. Square Planar
C. XeF_4	III. Octahedral
D. SF_6	IV. Square Pyramidal

Choose the correct answer from the options give below

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

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

50. Which of the following pairs of compounds is isoelectronic and isostructural?

(a) TeI_2, XeF_2 (b) IBr_2, XeF_2 (c) IF_3, XeF_2 (d) $BeCl_2$, XeF_2

In each sub question given below a statement (S) and explanation (E) is given. Choose the correct answers from the codes (a), (b), (c) and (d) given for each question:

(a) S is correct but E is wrong

(b) S is wrong but E is correct

(c) Both S and E are correct and E is correct explanation of S

(d) Both S and E are correct but E is not correct explanation of S

51. S: Between $SiCl_4$ and CCl_4, only SiCl4 reacts with water.

E: $SiCl_4$ is ionic and CCl_4 is covalent.

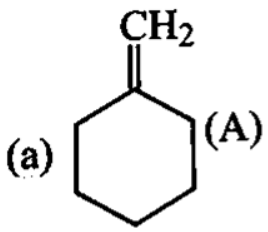
52. S: Pb^{4+} compounds are stronger oxidising agents than Sn^{4+} compounds.

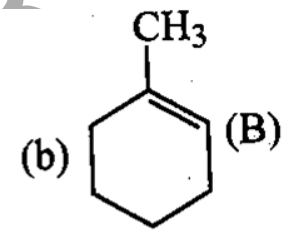
E: The higher oxidation states for the group 14 elements are more stable for the heavier members of the group due to 'inert-pair effect'

53. S: Cyclic silicates and chain silicates have the same general molecular formula.

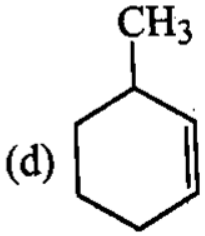
E: In cyclic silicates, three corners of each SiO4 tetrahedron are shared while in chain silicates only two are shared with other tetrahedron.

54. In the reaction with HCl, an alkene reacts in accordance with Markovnikov's rule, to give a product 1-chloro-1-methylcyclohexane. The possible alkene is :





(c) (A) and (B)



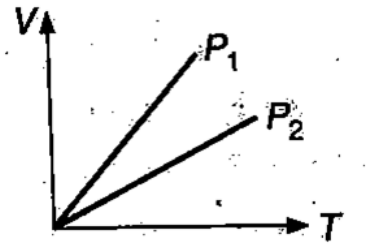
55. V versus T curves at constant pressure P_1 and P2 for an ideal gas are shown in figure. Which is correct?

(a) $P_1 > P2$

(b) $P_1 < P2$

(c) $P_1 = P2$

(d) All of these



56. Sodium nitroprusside when added to an alkaline solution of sulphide ions produces purple colouration due to the formation of:

(a) $Na_4[Fe(CN)_5 NOS]$ (b) $Na_3[Fe(CN)_5 NOS]$

(c) $Na_2[Fe(H_2O)_5 NOS]$ (d) $Na[Fe(H_2O)_5 NOS]$

57. $[X]+H_2SO_4 \rightarrow$ [Y] a colourless gas with irritating smell, $[Y]+ K_2Cr_2O_7 + H_2SO_4 \rightarrow$ Green solution, [X] and [Y] are:

(a) SO_3^{2-}, SO_2 (b) Cl^-, HCl (c) S^{2-}, H_2S (d) CO_3^{2-}, CO_2

58. The correct match between item I and item II is :

Item I (Compound)	Item II (Reagent)
(A) Lysine	(P) 1-naphthol
(B) Furfural	(Q) Ninhydrin
(C) Benzyl alcohol	(R) KMnO4
(D) Styrene	(S) Ceric ammonium nitrate

Codes:

	A	B	C	D
(a)	Q	R	S	P
(B)	R	P	Q	S
(C)	Q	P	S	R
(D)	Q	P	R	S

59. Identify the product 'Z' in the following series of reactions;

$$C_6H_{12}O_6 \text{ (glucose)} \xrightarrow{HCN} X \xrightarrow{H_2O} Y \xrightarrow{HI} Z:$$

(a) hexanoic acid (b) a-methyl caproic acid

(c) heptanoic acid (d) none of these

60. **Which of the following should be the most volatile?**

(I) $CH_3CH_2CH_2NH_2$ **(II)** $(CH_3)_3N$

(III) $(CH_3CH_2)(CH_3)NH$ **(IV)** $CH_3CH_2CH_3$

(a) II **(b) IV**

(c) I **(d) III**

61. The correct order of energies of molecular orbitals of N 2 molecule, is:

(a) ols<σ*ls<02s<σ*25<62pz <

(π2px = n2py) <(π*2px = π*2py) <σ*2pz

(b) ols <σ*ls <σ2ς <σ*25 <02p₂ <

σ*2pz <(π2px = π2py) <(π*2px = π*2py)

(c) als <σ*1s <02s <σ*2s < (π2px = π*2py)< (π*2px = π*2py) <02pz <0*2pz

(d) ols <σ*ls<02s <σ* 2s < (π2px = n2py)< 02pz <(π*2px = π*2py) <σ*2p2

62. Match List-I with List-II:

(A) PCL_5 (i) Square pyramidal

(B) SF_6 (ii) Trigonal planar

(C) BrF_5 (iii) Octahedral

(D) BF_3 (iv), Trigonal bipyramidal

Choose the correct answer from the options given below:

(a) A-(iv), B-(iii), C - (ii), D - (i) (b) A-(iv), B-(iii), C - (i), D – (ii)

(C) A-(ii), B-(iji), C- (iv), D - (i) (d) A-(iii), B-(i), C- (iv), D-ii

63. Which of the following molecules represents the order of hybridisation sp^2, sp^2, sp, sp from left to right atoms?

(a) HC≡-C≡CH (b) CH2=CH-C≡CH

(c) CH3-CH=CH-CH2 (d) CH2=CH-CH=CH2

64. Predict the correct order of electron repulsion among the following:

(a) lone pair-lone pair > lone pair - bond pair > bond pair-bond pair

(b) lone pair-lone pair > bond pair-bond pair > lone pair-bond pair

(c) bond pair-bond pair > lone pair-bond pair > lone pair-lone pair

(d) lone pair-bond pair > bond pair-lone pair > lone pair-lone pair

65. Which of the following molecules is non-polar in nature?

(a) NO_2 (b) $POCl_3$ (c) CH_2O (d) $SbCl_5$

66. Match Column-I with Column-II.

Column-I (Complexes)	Column-II (Absorbed Light)
(A) $[Ni(H_2O)_4(en)]^{2+}(aq)$	(p) Yellow Orange

(B) $[Ni(H_2O)_4(en)_2]^{2+}(aq)$ (q) Blue-Green

(C) $[Ni(en)_3]^{2+(}aq)$ (r) Red

(a) A-(r), B-(q), C-(p) (b) A-(p), B-(r), C-(q)

(c) A-(q), B-(r), C-(p) (d) A-(r), B-(p), C-(q)

DIRECTIONS: Read the statements carefully and answer the question on the basis of following options.

(a) Both statement I and II are correct.

(b) Both statement I and II are incorrect.

(c) Statement I is correct but statement II is incorrect.

(d) Statement II is correct but statement I is incorrect.

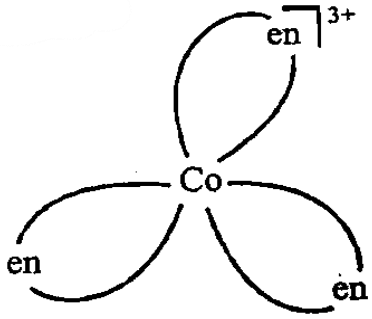
67. Statement I: $[Fe(CN)_6]^{3-}$ is weakly paramagnetic, while $[Fe(CN)_6]^{4+}$ is diamagnetic.

Statement II: $[Fe(CN)_6]^{3-}$ has +3 oxidation state while $[Fe(CN)_6]^{4-}$ has +2 oxidation state.

68.Statement I: NF_3 is a weaker ligand than $N(CH_3)_3$.

Statement II: NF_3 ionizes to give F ions in aqueous solution.

69. The complex given is



(i) non-superimposable on its mirror images

(ii) optically inactive

(iii) rotate plane polarised light

(iv) planar

(a) (i) and (ii) (b) (i) and (iv) (c) (i) and (iii) (d) (ii) only

70. Electrolyte:	KCl	KNO_3	HCl	NaOAc	NaCl
A ($S\ cm^2\ mol^{-1}$):	149.9	145	426.2	91	126.5

Calculate AHOAC using appropriate molar conductances of the electrolytes listed above at infinite dilution in H_2O at 25°C

(a) 217.5 (b) 390.7 (c) 552.7 (d) 517.2

71. Match Column-I with Column-II.

Column-I (Ion) Column-II (Mcalculated)

(A) Ti^{2+} (p) 2.84

(B) Zn^{2+} (q) 5.92

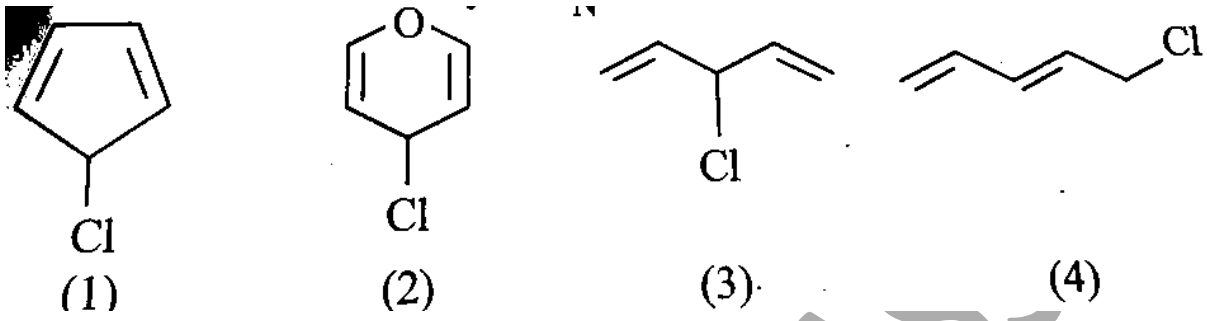
(C) Mn^{2+} (r) 0

(D) Sc^{3+} (s) 4.90

(a) A-(s), B- (p), C- (q), D-(r) (b) A-(r), B-(p), C- (q), D-(s)

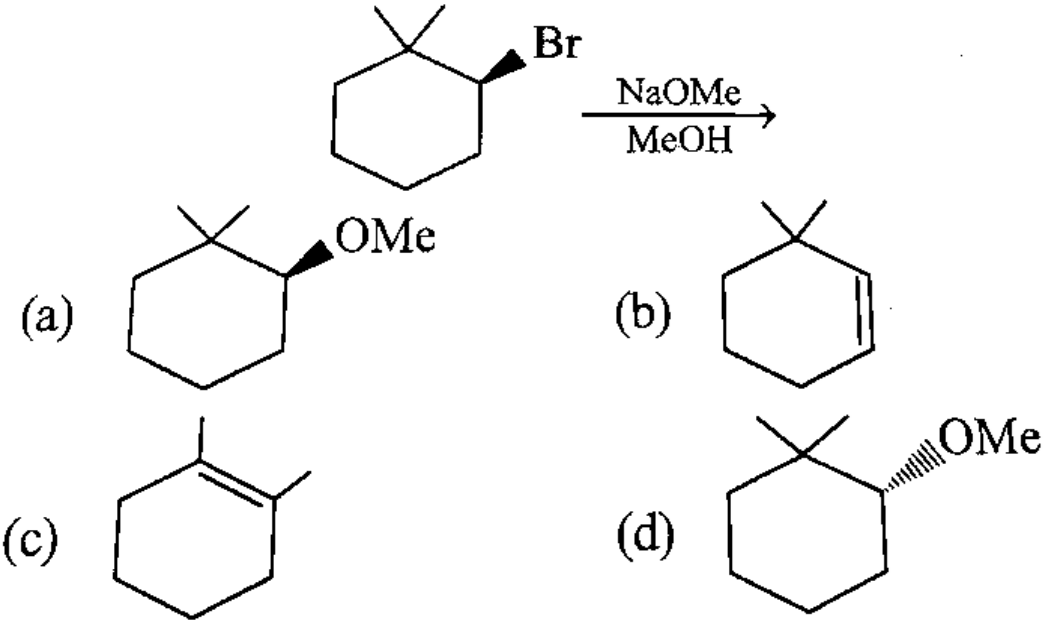
(c) A-(p), B-(r), C- (q), D - (s) (d) A-(p), B-(s), C-(q), D- (r)

72. Order of reactivity in S1 reaction is



(a) 4>3>2>1 (b) 2>1>4>3 (c) 2>4>1>3 (d) 2>4>3>1

73. The major product of the following reaction is:

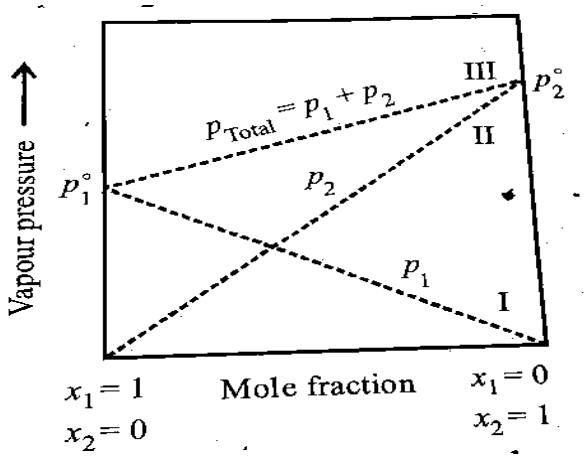


74. A plot of p_1 and p_2 vs the mole fractions x_1 and x_2 is given as.

In this figure, lines I and II intersect through the point for which.

(a) $x_1 \neq 1$; $x_2 = 1$ (b) $x_1 = x_2 \neq 1$

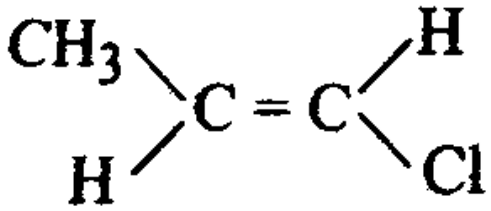
(C) $x_1 = 1$; $x_2 \neq 1$ (d) $x_1 = x_2 = 1/2$



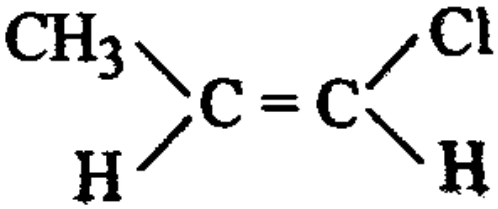
75. A first order reaction is half completed in 45 minutes. How long does it need 99.9% of the reaction to be completed

(a) 5 hours (b) 7.5 hours (c) 10 hours (d) 20 hours

76. Which of the following is correct set of physical properties of the geometrical isomers?



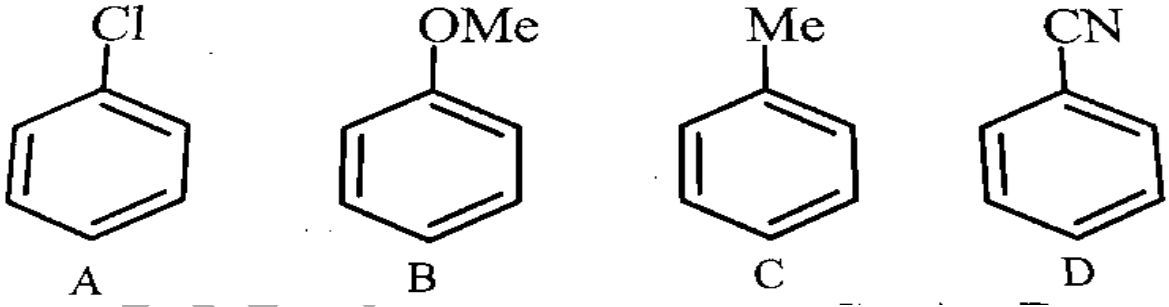
I



II

	Dipole moment	B.P.	M.P.	Stability
(a)	I>II	I>II	II>I	I>II
(b)	II>I	II>I	II>I	II>I
(c)	I>II	I>II	I>II	I>II
(d)	II>I	II>I	I>II	I>II

77. The increasing order of reactivity of the following compounds towards aromatic electrophilic substitution reaction is:



(a) D<A<C<B (b) B<C<A<D (c) A<B<C<D (d) D<B<A<C

78. Which out of A, B, C and D is/are not correctly categorised.

	Nucleophile	Electrophile
A.	HS^-	Cl^+
B.	BF_3	$(CH)_3N$
C.	H_2N^-	-C=0
D.	R_3C-X	$C_2H_5O^-$

(X=Halogen)

(a) B, C and D (b) C and D (c) C only (d) B and D

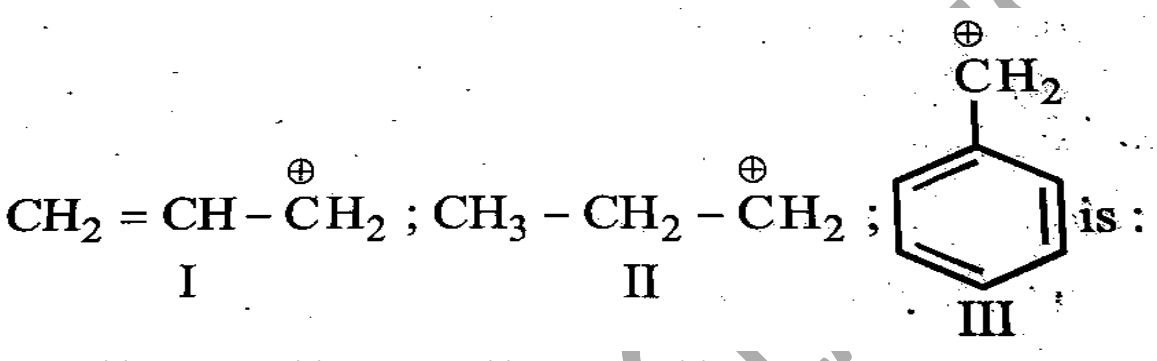
79. 5.0 g of an organic compound was Kjeldahlished and the NH_3, evolved was absorbed in 100 mL of 1.0 MH_2SO_4. The residual acid required 120 cm^3 of 1.0 M NaOH. The % of nitrogen in the organic compound is

(a) 25.4 (b) 22.4 (c) 2.24 (d) 2.54

80. In Duma's method 0.52 g of an organic compound on combustion gave 68.6 mL N_2 at 27°C and 756 mm pressure. What is the percentage of nitrogen in the compound?

(a) 12.22% (b) 14.93% (c) 15.84% (d) 16.23%

81. The order of stability of the following carbocations:



(a) III>II>I (b) II>III>I (c) I>II>III (d) III>I>II

82. What will happen when D-(+)-glucose is treated with methanolic-HC_1 followed by Tollens' reagent?

(a) A black ppt. will be formed

(b) A red ppt. will be formed

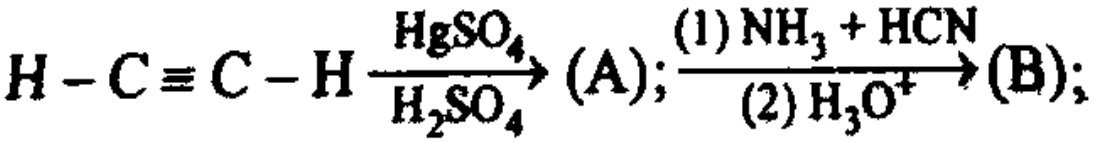
(c) A green colour will appear

(d) No characteristic colour or ppt. will be formed

83. Dinucleotide is obtained by joining two nucleotides together by phosphodiester linkage. Between which carbon atoms of pentose sugars of nucleotides are these linkages present?

(a) 5' and 3' (b) l' and 5' (c) 5' and 5' (d) 3' and 3'

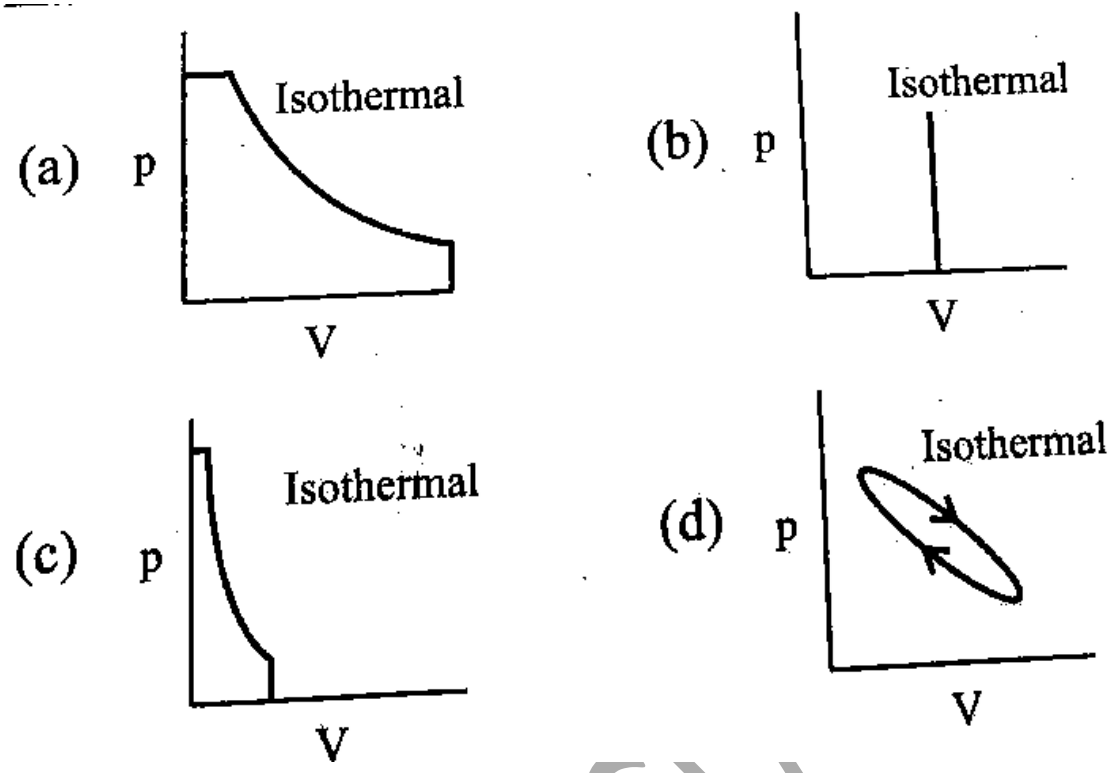
84.



Product (B) of the given reaction is:

(a) Glycine (b) Alanine (c) Valine (d) Leucine

85. Which of the following p-V curve represents maximum work done?



86. Identify the correct statements from the following:

(A) $CO_2(g)$ is used as refrigerant for ice-cream and frozen food.

(B) The structure of C_{60} contains twelve six carbon rings and twenty five carbon rings

(C) ZSM-5, a type of zeolite, is used to convert alcohols into gasoline.

(D) CO is colourless and odourless gas.

(a) (A) and (C) only (b) (B) and (C) only (c) (C) and (D) only (d) (A), (B) and (C) only

87. Which of the following statement is not correct about diborane ?

(a) The four terminal B-H bonds are two centre two electron bonds.

(b) The four terminal hydrogen atoms and the two boron atoms lie in one plane.

(c) Both the boron atoms are sp-hybridised.

(d) There are two 3-centre-2-electron bonds.

88. Identify the incorrect statement :

(a) The transition metals and their compounds are known for their catalytic activity due to their ability to adopt multiple oxidation states and to form complex.

(b) Interstitial compounds are those that are formed when small atoms like H, C or N are trapped inside the crystal lattices of metals.

(c) The oxidation state of chromium in CrO_4^{2-} and $Cr_2o_7^{2-}$ are not the same.

(d) Cr^{2+} (d4) is a stronger reducing agent than Fe^{2+} (d6) in water.

89. A compound 'X' upon reaction with H_2O produces a colourless gas 'Y with rotten fish smell. Gas 'Y' is absorbed in a solution of CuSO4 to give Cu 3P2 as one of the products. Predict the compound 'X.

(a) $Ca_3(PO_4)_2$

(b) Ca_3P_2

(c) NH_4Cl

(d) As_2O_3

90. Match the columns

Column-I (Reactions)	Column-II (Reagents)
(A) Benzophenone → Diphenylmethane	(p) LiAlH4
(B) Benzaldehyde → 1-Phenylethanol	(q) DIBAL-H
(C) Cyclohexanone → Cyclohexanol	(r) Zn(Hg)/Conc H
(D) Phenyl benzoate → Benzaldehyde	(s) CH3MgBr

a) A (r), B(s), C - (p), D - (q)

b) A (s), B (r), C - (q), D - (p)

c) A (q), B(s), C - (p), D - (r)

d) A (p), B(s), C - (r), D - (q)