TSPH

TSPH DIGITAL GURU

NEET Actual Test 2021
Chemistry Question Paper
CODE: O6

www.tsph.in

25 Students Above 95% (NTA SCORE)

2021 JEE MAINS (Feb & March Attempt)

Unnati Singh

99.83%

Dev Goti

99.20%

SANYAM C.

98.92%

TUSHAR R.

98.86%

JANAM K.

98.45%

SAHIL K.

98.27%

2021 JEE MAINS (Feb & March Attempt)

BHAVANI J.
97.75%

ADITYA M.
97.66%

DHRUVIL S.
97.66%

DEEPAM S.
97.64%

PREET J.
97.28%

PAVAN A.
97.15%

ADITYA J.
96.98%

TANVI D.
96.97%

MEET R.
96.90%

HARSH S.
96.53%

KESHAV S.
96.33%

KUNAL G.
96.19%

UTSAV A.
96.17%

JENIL S.
95.95%

HEET B.
95.95%

SNEHA M.
95.80%

DEEPALI D.
95.36%

JIGAR S.
95.30%

AKASH M.
95.28%

#NEET - 2020 RESULTS

GOVT.-MBBS SELECTIONS

665 / 720

KHUSHBOO R.

KEM, MUMBAI

MAUNIK MODI

641 / 720

LTMMC, MUMBAI

PAWAN MODI

638 / 720

COOPER, MUMBAI

KALASH S.

630 / 720

GMC, MUMBAI

HEMLATA P.

626 / 720

COOPER, MUMBAI

#NEET - 2020 RESULTS

GOVT.-MBBS SELECTIONS

LUCKY D.
626 / 720
COOPER, MUMBAI

SHUBH D.
615 / 720
IGMC, NAGPUR

SUMAN S.
611 / 720
COOPER, MUMBAI

SHASHANK D.
608 / 720
GMC, MIRAJ

SHRUTI P.
605 / 720
GMC, KOLHAPUR

SUBHJYOTI J.
591 / 720
GMC, SOLAPUR

SHRIRANG S.
585 / 720
GMC, JALGAON

SHUBHAM PAL
584 / 720
GMC, AKOLA

LOKESH JHA
582 / 720
GMC, AMBAJOGAI

ANSHIKA M.
581 / 720
GMC, JALGAON

DRASHTI S.
502 / 720
GMC, MIRAJ

28
Students Above 500 Score

2020 JEE & MHCET

DAKSH P.

IIIIT, JABALPUR

JEE 98.27%

MHCET 99.75%

SEJAL C.

NIT, SURAT

JEE 97.02%

MHCET 99.92%

DIVYASHREE R.

NIT, SURAT

JEE 96.13%

MHCET 99.88%

AYUSH S.

BIT MESRA, RANCHI

JEE 94.54%

SHRUTI S.

NIT, RAIPUR

*PWD CATEGORY

% indicates percentile score

2020 JEE & MHCET

MOHIT SHARMA

VJTI, MUMBAI

MHCET - 99.98%

JEE - 95.33%

VIKAS G.

MHCET 99.31%

D.J. SANGHVI

SHYAM B.

MHCET 99.23%

D.J. SANGHVI

VIKRAM S.

MHCET 99.08%

D.J. SANGHVI

KARAN P.

MHCET 99.07%

WALCHAND

AYUSH J.

MHCET 98.97%

D.J. SANGHVI

DEEP P.

MHCET 98.77%

D.J. SANGHVI

NITESH B.

MHCET 98.49%

D.J. SANGHVI

KHUSHI M.

MHCET 98.41%

D.J. SANGHVI

DEEPTI S.

MHCET 98.09%

D.J. SANGHVI

TSPH HAI TO MUMKIN HAI

TSPH DIGITAL GURU

CLASS ON CLICK

Anytime access to pre recorded videos from anywhere.

TEACHER ON TIP

Video solutions of MCQs will be just a click away !

CBT

Online Computer Based Testing.

REAL TIME ANALYTICS

Time, difficulty level & performance analysis report on dashboard

MY MISTAKE BOOK

Customised digital book, keeping track of your mistakes.

DIGITAL LIBRARY

Challenge rounds, tutorial sheet & assignments for rigorous practice.

The Science Private's Hub

NEET 2021
Chemistry Question Paper
CODE – O6

Chemistry

51. Zr(Z = 40) and Hf(Z = 72) have similar atomic and ionic radii because of

(1) lanthanoid contradiction
(2) having similar chemical properties
(3) belonging to same group
(4) diagonal relationship

52. The right option for the statement "Tyndall effect is exhibited by" is

(1) Starch solution (2) Urea solution
(3) NaCl solution (4) Glucose solution

53. Match the List-I with List-II

	List I		**List II**
(1)	PCl_5	(i)	Square pyramidal
(2)	SF_6	(ii)	Trigonal planar
(3)	BrF_5	(iii)	Octahedral
(4)	BF_3	(iv)	Trigonal bipyramidal

Choose the correct answer from the option given below

(1) a-iii; b-i; c-iv; d-ii
(2) a-iv; b-iii; c-ii; d-i
(3) a-iv; b-iii; c-i; d-ii
(4) a-ii; b-iii; c-iv; d-i

54. The pK_b of dimethylamine and pK_a of acetic acid are 3.27 and 4.77 respectively at T(K). The correct option for the pH of dimethylammonium acetate solution is

(1) 8.50 (2) 5.50
(3) 7.75 (4) 6.25

55. The maximum temp. that can be achieved in blast furnace is

(1) upto 1900K (2) upto 5000K
(3) upto 1200K (4) upto 2200K

56. Given below are two statements

Statement I : Aspirin and Paracetamol belong to the class of narcotic analgesics

Statement II: Morphine and Heroin are non-narcotic analgesics.

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

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

57. Which one of the following polymers is prepared by addition polymerisation?

(1) Novolac (2) Dacron
(3) Teflon (4) Nylon-66

58. BF_3 is planar and electron deficient compound. Hybridization and number of electrons around the central atom, respectively are

(1) sp^2 and 6 (2) sp^2 and 8
(3) sp^3 and 4 (4) sp^3 and 6

59. Which of the following reactions is the metal displacement reaction? Choose the right option

(1) $Fe + 2HCl \rightarrow FeCl_2 + H_2\uparrow$
(2) $2Pb(NO_3)_2 \rightarrow 2PbO + 4NO_2 + O_2\uparrow$
(3) $2KClO_3 \xrightarrow{\Delta} 2KCl + 3O_2$
(4) $Cr_2O_3 + 2Al \xrightarrow{\Delta} Al_2O_3 + 2Cr$

60. Tritium, a radioactive isotope of hydrogen, emits which of the following particles?

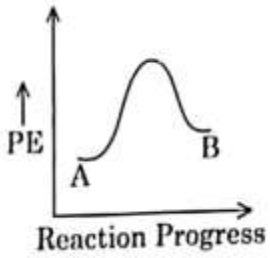
(1) Gamma(γ) (2) Neutron(n)
(3) Beta(β^-) (4) Alpha(α)

61. An organic compound contains 78%(by w.t) carbon and remaining percentage of hydrogen. The right option for the emperical formula of this compound is : [Atomic wt. of C is 12, H is 1]

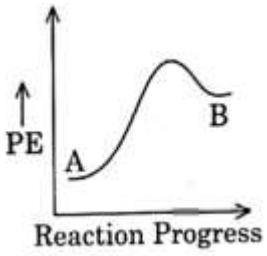
(1) CH_3 (2) CH_4
(3) CH (4) CH_2

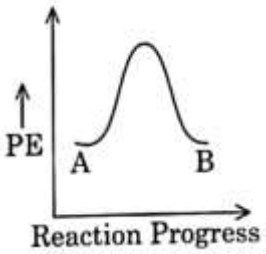
62. For a reaction A $\rightarrow$ B, enthalpy of reaction is – 4.2 kJ mol^{-1} and enthalpy of activation is 9.6 kJ mol^{-1}. The correct potential energy profile for the reaction is shown in option

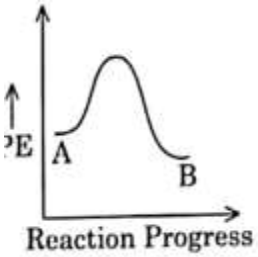
(1)



(2)



(3) 

(4) 

63. Dihedral angle of least stable conformer of ethene is

(1) 60° (2) 0°
(3) 120° (4) 180°

64. Statement I: Acid strength increases in the order given as HF << HCl << HBr < HI
Statement II: As the size of the elements F, Cl, Br, I increases down the group, the bond strength of HF, HCl, HBr and HI decreases and so the acid strength increases.

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

65. The RBC deficiency is deficiency disease of

(1) Vitmin B_1 (2) Vitamin B_2
(3) Vitamin B_{12} (4) Vitamin B_6

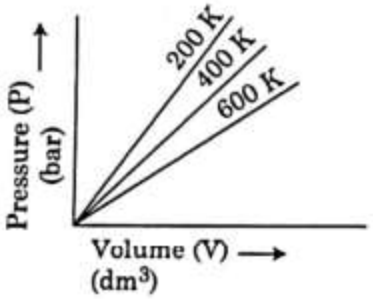
66. Ethylene diaminetetraacetate(EDTA) ion is

(1) Bidentate ligand with two "N" donor atoms
(2) Unidentate ligand
(3) Hexadentate ligand with four "O" and two 'N" donor atoms
(4) Tridentate ligand with three "N" donor atoms

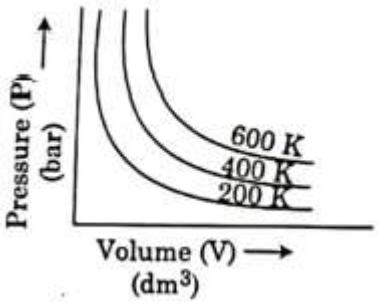
67. A particular station of All India Radio, New Delhi, broadcasts on a frequency of 1,368 kHz (kilohertz). The wavelength of the electromagnetic radiation emitted by the transmitter is [speed of light, $c = 3.0 \times 10^8\ ms^{-1}$]

(1) 2192 m (2) 21.92cm
(3) 219.3m (4) 219.2m

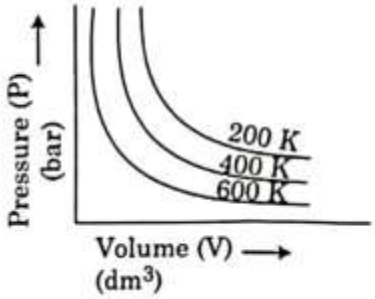
68. Choose the correct option for graphical representation of Boyle's which shows a graph of pressure vs. volume of a gas at different temp.



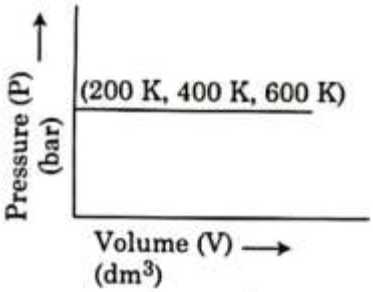
(1)



(2)



(3)



(4)

69. The molar conductance of NaCl, HCl and CH_3COONa at infinite dilution are 126.45, 426.16and 91.0 S cm^2 mol^{-1} respectively. The molar conductance of CH_3COOH at infinite dilution is Choose the right option for your answer

(1) 698.28 S cm^2 mol^{-1}

(2) 540.48 S cm^2 mol^{-1}

(3) 201.28 S cm^2 mol^{-1}

(4) 390.71 S cm^2 mol^{-1}

70. Which one of the following methods can be used to obtain highly pure metal which is liquid at room temp.

(1) Distillation (2) Zone refining

(3) Electrolysis (4) Chromatography

71. What is the IUPAC name of the organic compound formed in the following chemical reaction?

$$\text{Acetone} \xrightarrow[(ii)H_2O,H^+]{(i)C_2H_5MgBr,\text{dry ether}} \text{Product}$$

(1) pentan-3-ol

(2) 2-methylbutan-2-ol

(3) 2-methyl butan-2ol

(4) pentan-2ol

72. The major product of the following chemical reaction is

$$\begin{matrix}CH_3\\CH_3\end{matrix}\!\!>\!CH-CH=CH_2+HBr \xrightarrow{(C_6H_5CO)_2O_2} ?$$

(1) $\begin{matrix}CH_3\\CH_3\end{matrix}\!\!>\!CH-\underset{\displaystyle Br}{\underset{|}{CH}}-CH_3$

(2) $\begin{matrix}CH_3\\CH_3\end{matrix}\!\!>\!CBr-CH_2-CH_3$

(3) $\begin{matrix}CH_3\\CH_3\end{matrix}\!\!>\!CH-CH_2-CH_2-Br$

(4) $\begin{matrix}CH_3\\CH_3\end{matrix}\!\!>\!CH-CH_2-CH_2-O-COC_6H_5$

73. The following solutions were prepared by dissolving 10 g of glucose ($C_6H_{12}O_6$) in 250 ml of water (P_1), 10 g of urea (CH_4N_2O) in 250 ml of water (P_2) and 10 g of sucrose ($C_{12}H_{22}$) in 250 ml of water (P_3). The right option for the decreasing order of osmotic pressure of these solution is

(1) $P_2 > P_3 > P_1$ (2) $P_3 > P_1 > P_2$ (3) $P_2 > P_1 > P_3$ (4) $P_1 > P_2 > P_3$

74. The compound which shows metamerism is :

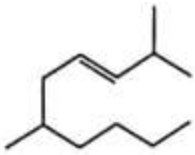
(1) C_3H_6O (2) $C_4H_{10}O$

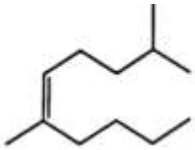
(3) C_5H_{12} (4) C_3H_8O

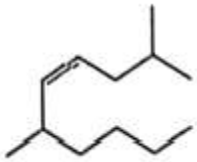
75. Noble gase are named because of their inertness towards reactivity. Identify an incorrect statement about them.

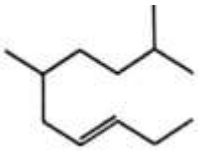
(1) NobIe gases have weak dispersion forces.
(2) NobIe gases have Iarge. Positive values of electron gain enthalpy.
(3) Noble gases are sparingly soluble in water
(4) Noble gases have very high melting and boiling points

76. The correct structure of 2,6-Dimethyl-dec-4-ene is

(1) 

(2) 

(3) 

(4) 

77. Right option for the number of tetrahedral and octhedral voids in hexagonal primitive unit cell are

(1) 2, 1 (2) 12, 6
(3) 8, 4 (4) 6, 12

78. Among the following alkaline earth metal halides, one which is covalent and soluble in organic solvents is

(1) Magnesium chloride
(2) Beryllium chloride
(3) Calcium chloride
(4) Strontium chloride

79. Which one among the following is the correct option for right relationship between C_P and C_V for one mole of ideal gas?

(1) $C_P = RC_V$ (2) $C_V = RC_P$
(3) $C_P + C_V = R$ (4) $C_P - C_V = R$

80. **The correct sequence of bond enthalpy of 'C-X' bond is**

(1) $CH_3 - F < CH_3 - Cl < CH_3 - Br < CH_3 - I$

(2) $CH_3 - Cl > CH_3 - F > CH_3 - Br > CH_3 - I$

(3) $CH_3 - F < CH_3 - Cl > CH_3 - Br > CH_3 - I$

(4) $CH_3 - F > CH_3 - Cl > CH_3 - Br > CH_3 - I$

81. The major product form in dehydrohalogenation reaction of 2-Bromopentane is Pent-2-ene. This product formation is based on?

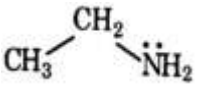
(1) Hofmann rule (2) Huckel's rule

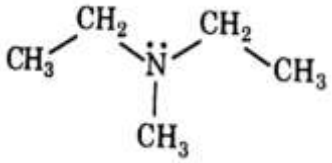
(3) Saytzeff's rule (4) Hund's rule

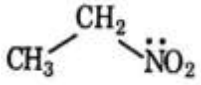
82. The correct option for the number of body centred unit cells in all 14 types of Bravais unit cell is

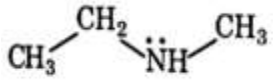
(1) 2 (2) 3 (3) 7 (4) 5

83. Identify the compound that will react with Hinsberg's reagent to give a solid which dissolves in alkali

(1) 

(2) 

(3) 

(4) 

84. The structure of beryllium chloride in solid state and vapour phase, are

(1) Dimer and Linear, respectively

(2) Chain in both

(3) Chain and dimer , respectively

(4) Linear in both

85. The incorrect statement among the following is

(1) Lanthanoids are good conductors of heat and electricity

(2) Actinoids are highly reactive metals, especially when finely divided

(3) Actinoid contraction is greater for element to element than Lanthanoid contraction

(4) Most of the trivalent Lanthanoid ions are colourless in the solid state

86. Match List –I with List-II

	List I		**List II**
(a)	$SO_2(g) + O_2(g) \rightarrow 2SO_3(g)$	(i)	Acid rain
(b)	$HOCl(g) \xrightarrow{hv} OH + Cl$	(ii)	Smog
(c)	$CaCO_3 + H_2SO_4 \rightarrow CaSO_4 + H_2O + CO_2$	(iii)	Ozone depletion
(d)	$NO_2(g) \xrightarrow{hv} NO(g) + O(g)$	(iv)	Tropospheric pollution

Choose the correct answer from the options given below

(1) a-iv; b-iii; c-i; d-ii
(2) a-iii; b-ii; c-iv; d-i
(3) a-i; b-ii; c-iii; d-iv
(4) a-ii; b-iii; c-iv; d-i

87. The correct option for he value of vapour pressure of a solution at 45° with benzene to octane in molar ratio 3 : 2 is
[At 45°C vapour pressure of benzene is 280 mm Hg and that octane is 420 mm Hg. Assume ideal gas]

(1) 336 mm of Hg (2) 350 mm of Hg
(3) 160 mm of Hg (4) 168 mm of Hg

88. $CH_3CH_2COO^-Na^+ \xrightarrow[\text{Heat}]{NaOH,+?} CH_3CH_3 + Na_2CO_3$

Consider the above reaction and identify the missing reagent/chemical

(1) CaO (2) DIBAL-H
(3) B_2H_6 (4) Red Phosphorus

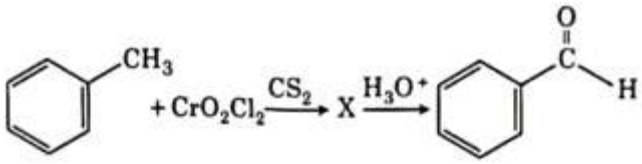
89. In which one of the following arrangements the given sequence is not strictly according to the properties indicated against it?

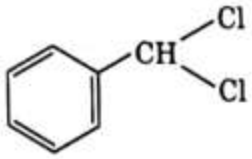
(1) $NH_3 < PH_3 < AsH_3 < SbH_3$: Increasing acidic character
(2) $CO_2 < SiO_2 < SnO_2 < PbO_2$: Increasing oxidizing power
(3) HF < HCl < HBr < HI : Increasing acidic strength
(4) $H_2O < H_2S < H_2Se < H_2Te$: Increasing pK_a values

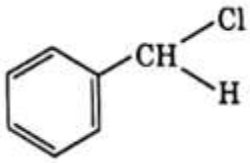
90. Which of the foollowing molecules is non –polar in nature?

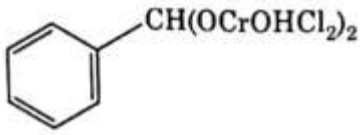
(1) $SbCl_5$
(2) NO
(3) $POCl_3$
(4) CH_2O

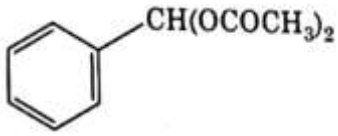
91 . The intermediate compound 'X' in the following chemical reaction is:



(1) 

(2) 

(3) 

(4) 

92. Choose the correct option for the total pressure (in atm.) in a mixture of 4g O_2 and 2g H_2 confirmed in a total volume of one litre at 0°C is [Given R = 0.082 L atm $mol^{-1}K^{-1}$, T = 273K]

(1) 25.18 (2) 26.02

(3) 2.518 (4) 2.602

93. Match List-I with List-II

	List I		List II
(a)	$[Fe(CN)_6]^{3-}$	(i)	5.92 BM
(b)	$[Fe(H_2O)_6]^{3+}$	(ii)	0 BM
(c)	$[Fe(CN)_6]^{4-}$	(iii)	4.90 BM
(d)	$[Fe(H_2O)_6]^{2+}$	(iv)	1.73BM

Choose the correct answer from the option given below

(1) a-i; B-iii; c-iv; d-ii

(2) a-iv; B-i; c-ii; d-iii

(3) a-iv; B-ii; c-i; d-iii

(4) a-ii; B-iv; c-iii; d-i

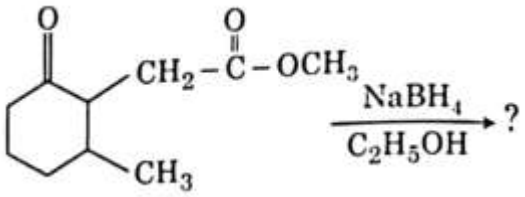
94. The slope of Arrhenius Plot (ln k v/s 1/T) of first order reactions is -5×10^3K. The value of E_a of the reaction is. Choose the correct option for your answer
Given R = 8.314 $JK^{-1}mol^{-1}$]

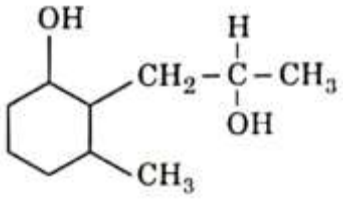
(1) 166 kJ mol^{-1} (2) – 83 kJ mol^{-1}
(3) 41.5 kJ mol^{-1} (4) 83.0 kJ mol^{-1}

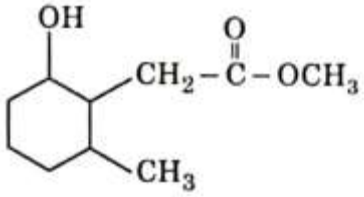
95. The molar conductivity of 0.007M acetic acid is 20 S cm^2 mol^{-1}. What is the dissociation constant of acetic acid? Choose the correct option
[$\Lambda^{o}_{H^+} = 350\ Scm^2mol^{-1}$; $\Lambda^{o}_{CH_3COO^-} = 50S\ cm^2mol^{-1}$]

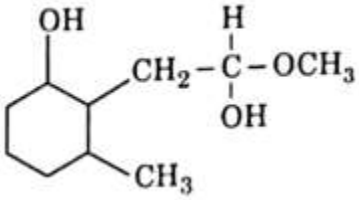
(1) 1.75×10^{-5} mol L^{-1} (2) 2.50×10^{-5} mol L^{-1}
(3) 1.75×10^{-4} mol L^{-1} (4) 2.50×10^{-4} mol L^{-1}

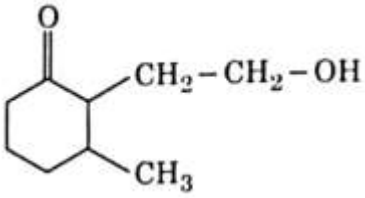
96. The product formed in the following chemical reaction is



(1)


(2)


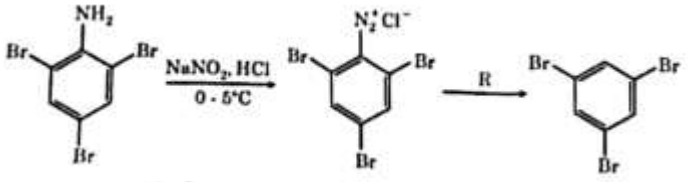
(3)


(4)


97. For irreversible expansion of an ideal gas unit isothermal condition, the correct option is

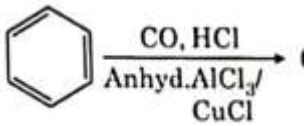
(1) $\Delta U = 0, \Delta S_{total} \neq 0$ (2) $\Delta U \neq, \Delta S_{total} = 0$
(3) $\Delta U = 0, \Delta S_{total} = 0$ (4) $\Delta U \neq 0, \Delta S_{total} \neq 0$

98. The reagent 'R' in the given sequence of chemical reaction is



(1) HI (2) CuCN/KCN (3) H_2O (4) CH_3CH_2OH

99. Match List-I with List-II

	List I		List II
(a)		(i)	Hell-Vohard-Zelinsky reaction
(b)	$R-\overset{\overset{O}{\|\|}}{C}-CH_3 + NaOX \rightarrow$	(ii)	Gattermann-Koch reaction
(c)	$R - CH_2 - OH + R'COOH \xrightarrow{conc.H_2SO_4}$	(iii)	Haloform reaction
(d)	$R - CH_2COOH \xrightarrow[(ii)\,H_2O]{(i)X_2/red\,P}$	(iv)	Esterification

Choose the correct answer from the options given below

(1) a-i; b-iv; c-iii; d-ii

(2) a-ii; b-iii; c-iv; d-i

(3) a-iv; b-i; c-ii; d-iii

(4) a-iii; b-ii; c-i; d-iv

100. From the following pairs of ions which one is not an iso-electronic pairs?

(1) Mn^{2+}, Fe^{3+} (2) Fe^{2+}, Mn^{2+}

(3) O^{2+}, F^- (4) Na^+, Mg^{2+}