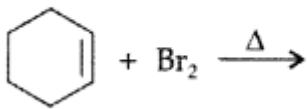
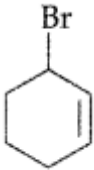
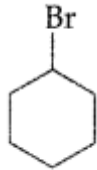
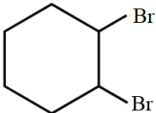
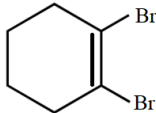
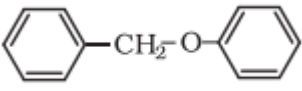

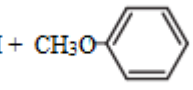

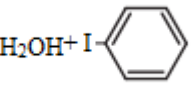

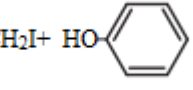

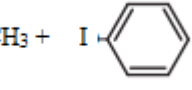
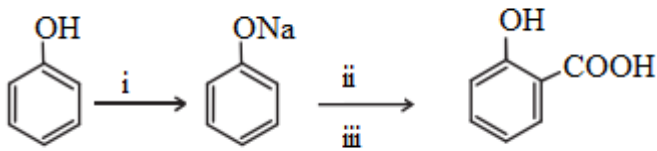


5	<p>Choose the incorrect statements.</p> <p>i. BiH_3 is the strongest reducing agent among the hydrides of group 15 elements.</p> <p>ii. N can form $\text{R}_3\text{N}=\text{O}$ but P cannot form $\text{R}_3\text{P}=\text{O}$.</p> <p>iii. Pentahalides of group 15 are more covalent than trihalides.</p> <p>a. Only I c. Both ii and iii</p> <p>b. Only ii d. i, ii, iii</p>	1
SECTION B – MULTIPLE CHOICE QUESTIONS		
6	<p>If three elements X, Y and Z crystallise in a cubic solid with X atoms at the corners, Y atoms at the cube centre and Z atoms at the faces of the cube, then write the formula of the compound.</p> <p>a. XYZ b. XYZ_4 c. XYZ_3 d. XY_2Z</p>	1
7	<p>Choose the structure of major monohalogen product in the following reaction.</p> <div style="text-align: center;">  </div> <p>a. </p> <p>b. </p> <p>c. </p> <p>d. </p>	1
8	<p>The IUPAC name of the ether $\text{CH}_2 = \text{CH}-\text{CH}_2\text{OCH}_3$ is _____</p> <p>a. Alkyl methyl ether b. 1-Methoxyprop-2-ene c. 3-Methoxyprop-1-ene d. Vinyl dimethyl ether</p>	1
9	<p>In nucleic acids, the individual nucleotides are linked through</p> <p>a. peptide linkage c. amide linkage</p> <p>b. phosphodiester linkage d. hydrogen bonds</p>	1

10	<p>The formation of $O_2^+[PtF_6]^-$ is the basis for the formation of Xenon fluorides. This is because</p> <ol style="list-style-type: none"> O_2 and Xenon have comparable electronegativities. O_2 and Xenon have comparable electron gain enthalpies. both O_2 and Xenon are gases O_2 and Xenon have comparable ionisation enthalpies. 	1
11	<p>A metallic crystal crystallises into a lattice containing a sequence of layers ABABAB..... Any packing of spheres leaves out voids in the lattice. What percentage by volume of lattice is empty space?</p> <ol style="list-style-type: none"> 74% 26% 52.4% 68% 	1
12	<p>Predict the product(s)</p> $(CH_3)_3CBr + KOH \xrightarrow[\text{heat}]{\text{ethanol}}$ <ol style="list-style-type: none"> $(CH_3)_3COH + KBr$ $(CH_3)_3C-O-CH_2CH_3 + KBr$ $(CH_3)_2C=CH_2 + KBr + H_2O$ $CH_3COCH_3 + HCHO$ 	1
13	<p>Which of the following reagents cannot, be used to oxidise primary alcohols to aldehydes?</p> <ol style="list-style-type: none"> CrO_3 in anhydrous medium $KMnO_4$ in acidic medium Pyridinium chlorochromate Heat in the presence of Cu at 573 K 	1
14	<p>Choose the correct options.</p> <ol style="list-style-type: none"> Curdling of milk is an example of denaturation of proteins. Keratin protein present in hair is a globular protein. The reaction of glucose with Br_2 water indicates the presence of aldehyde functional group. Glycine is the only optically active amino acid. <ol style="list-style-type: none"> Only iv i and ii i, iii and iv i and iii 	1
15	<p>Among the following molecules,</p> <ol style="list-style-type: none"> XeO_3 $XeOF_4$ XeF_6 <p>those having same number of lone pairs on Xe are</p> <ol style="list-style-type: none"> i and ii only i and iii only ii and iii only i, ii and iii 	1
16	<p>CCl_4 molecules are held in the crystal lattice by _____</p> <ol style="list-style-type: none"> London forces dipole-dipole interactions. covalent bonds coulombic forces 	1

17	<p>How will you bring about the following conversions? Propene to Nitropropane</p> <p>a. Step 1-HBr Step 2- AgNO₂ b. Step 1- HBr, peroxide Step 2- KNO₂ c. Step 1 – HF Step 2-KNO₂ d. Step 1 – HBr, peroxide Step 2 – AgNO₂</p>	1										
18	<p>The ether</p>  <p>when treated with HI produces _____</p> <p>a.  + </p> <p>b.  + </p> <p>c.  + </p> <p>d.  + </p>	1										
19	<p>The reason for the double helical structure of DNA is the operation of</p> <p>a. disulphide linkages b. van der Waals forces c. Hydrogen bonds d. All of these</p>	1										
20	<p>Which of the following order is not correct for halogens?</p> <p>a. Melting point- F₂ < Cl₂ < Br₂ < I₂ b. Bond dissociation enthalpy - I₂ < F₂ < Br₂ < Cl₂ c. Electron gain enthalpy – I < Br < Cl < F d. Oxidising power - I₂ < Br₂ < Cl₂ < F₂</p>	1										
21	<p>The radius of an atom is 220 pm. If it crystallises in a simple cubic lattice, what is the length of the side of the unit cell?</p> <p>a. 110 pm b. 508 pm c. 622.2 pm d. 440 pm</p>	1										
22	<p>Effect the following conversions</p> <table border="1" data-bbox="470 1803 1364 2004"> <thead> <tr> <th>Conversion</th> <th>Reagent</th> </tr> </thead> <tbody> <tr> <td>i- Phenol to benzoquinone</td> <td>a. 85% H₃PO₄, 440 K</td> </tr> <tr> <td>ii. Propene to propanol</td> <td>b. Na₂Cr₂O₇, H₂SO₄</td> </tr> <tr> <td>iii. Propan-2-ol to propene</td> <td>c. NaBH₄</td> </tr> <tr> <td>iv. Propanone to propan-2-ol</td> <td>d. B₂H₆, H₂O, 3H₂O₂, OH⁻</td> </tr> </tbody> </table>	Conversion	Reagent	i- Phenol to benzoquinone	a. 85% H ₃ PO ₄ , 440 K	ii. Propene to propanol	b. Na ₂ Cr ₂ O ₇ , H ₂ SO ₄	iii. Propan-2-ol to propene	c. NaBH ₄	iv. Propanone to propan-2-ol	d. B ₂ H ₆ , H ₂ O, 3H ₂ O ₂ , OH ⁻	1
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	<p>a. i - b, ii - c, iii - a, iv - d b. i - b, ii - d. iii - a, iv - c c. i - c, ii - a. iii - d, iv - b d. i - d, ii - b. iii - a, iv - c</p>	
23	<p>Choose the alcohol which reacts most readily with Lucas reagent.</p> <p>a. $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$</p> <p>b.</p> $\begin{array}{c} \text{CH}_3-\text{CH}-\text{CH}_3 \\ \\ \text{OH} \end{array}$ <p>c.</p> $\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_3-\text{C}-\text{OH} \\ \\ \text{CH}_3 \end{array}$ <p>d.</p> $\begin{array}{c} \text{CH}_3-\text{CH}-\text{CH}_2\text{OH} \\ \\ \text{CH}_3 \end{array}$	1
24	<p>Which of the following analogies is incorrect?</p> <p>a. Ostwald process: HNO_3 :: Deacon's process : Cl_2 b. Bi: Trihalide::N: Pentahalide c. Nitrogen: Diatomic:: Phosphorus: Tetraatomic d. SO_2 : Angular:: BrF_5 : Square pyramidal</p>	1
25	<p>A metal (atomic mass 50 u) has a body centred cubic crystal structure. The density of metal is 5.96 g cm^{-3}. Find the volume of the unit cell.</p> <p>a. $27.8 \times 10^{-24} \text{ cm}^3$ b. $2.78 \times 10^{-24} \text{ cm}^3$ c. $27.8 \times 10^{-23} \text{ cm}^3$ d. $278 \times 10^{-23} \text{ cm}^3$</p>	1
26	<p>Which one of the following is not an allylic halide?</p> <p>a. 4-Bromopent-2-ene b. 3-Bromo-2-methylbut-1-ene c. 1-Bromobut-2-ene d. 4-Bromobut-1-ene</p>	1
27	<p>Predict the reagents in the following reaction.</p>	1

	 <p>a. i- NaOH, ii – CO₂, iii- H⁺ b. i- Na, ii – COOH, iii - H⁺ c. i- NaOH, ii- CO₂, iii- NaOH d. i- NaOH, ii – H₂CO₃, iii- NaOH</p>	
28	<p>Choose the correct statements about nitro phenols.</p> <p>i. o-Nitrophenol is more steam volatile than p-Nitrophenol. ii. o-Nitrophenol is less acidic than phenol. iii. 2,4,6-Trinitrophenol is formed when phenol is treated with concentrated nitric acid. iv. A mixture of ortho and para nitro phenol is called picric acid.</p> <p>a. Only i b. Only iii c. Both ii and iv d. Both i and iii</p>	1
29	<p>Which among the following is incorrect?</p> <p>i. Among the hydrides of group 16, H₂O is the most acidic. ii. SF₆ is easily hydrolysed. iii. α- form of sulphur can be converted into β form at 369 K. iv. Bleaching by SO₂ is temporary due to the presence of nascent O.</p> <p>a. i and iv b. i, iii and iv c. ii and iii d. All the above</p>	1
30	<p>High concentration of O₃ can be dangerously explosive. Give reason.</p> <p>a. ΔS = +ve b. ΔH = -ve c. ΔG = -ve d. All of the above</p>	1
ASSERTION REASON TYPE		
31	<p>Assertion: Crystalline solids are anisotropic in nature Reason: Crystalline solids melt at a sharp and characteristic temperature.</p> <p>a. Assertion and Reason are both correct and Reason is the correct explanation of Assertion. b. Assertion and Reason are both correct but Reason is not the correct explanation of Assertion. c. Assertion is correct but Reason is wrong. d. Assertion is wrong but Reason is correct.</p>	1
32	<p>Assertion: SN₂ reactions proceeds with retention of configuration. Reason: SN₂ reactions proceed in a single step.</p>	1

	<p>a. Assertion and Reason are both correct and Reason is the correct explanation of Assertion.</p> <p>b. Assertion and Reason are both correct but Reason is not the correct explanation of Assertion.</p> <p>c. Assertion is correct but Reason is wrong.</p> <p>d. Assertion is wrong but Reason is correct.</p>	
33	<p>Assertion: Boiling points of alcohols are greater than ethers of same molecular mass. Reason: Ethers can form intermolecular hydrogen bonding with each other.</p> <p>a. Assertion and Reason are both correct and Reason is the correct explanation of Assertion.</p> <p>b. Assertion and Reason are both correct but Reason is not the correct explanation of Assertion.</p> <p>c. Assertion is correct but Reason is wrong.</p> <p>d. Assertion is wrong but Reason is correct.</p>	1
34	<p>Assertion: The melting points and solubility in water of amino acids are generally high and they behave like salts. Reason: In aqueous solution, the carboxyl group can lose a proton and amino group can accept a proton, giving rise to a dipolar ion known as zwitter ion.</p> <p>a. Assertion and Reason are both correct and Reason is the correct explanation of Assertion.</p> <p>b. Assertion and Reason are both correct but Reason is not the correct explanation of Assertion.</p> <p>c. Assertion is correct but Reason is wrong.</p> <p>d. Assertion is wrong but Reason is correct.</p>	1
35	<p>Assertion: The melting point of PH_3 is lower than NH_3 but higher than AsH_3. Reason: The electronegativity of P is more than As but lesser than N.</p> <p>a. Assertion and Reason are both correct and Reason is the correct explanation of Assertion.</p> <p>b. Assertion and Reason are both correct but Reason is not the correct explanation of Assertion.</p> <p>c. Assertion is correct but Reason is wrong.</p> <p>d. Assertion is wrong but Reason is correct.</p>	1

ANSWER KEY

Q.NO	ANSWER	Q.NO	ANSWER	Q.NO	ANSWER
1	a	13	b	25	a
2	a	14	d	26	d
3	b	15	d	27	a
4	c	16	a	28	d
5	b	17	d	29	d
6	c	18	c	30	d
7	a	19	c	31	b
8	c	20	c	32	d
9	b	21	d	33	c
10	d	22	b	34	a
11	b	23	c	35	d
12	c	24	b		

CHECKED BY : HOD - SCIENCE