



INDIAN SCHOOL AL WADI AL KABIR

DEPARTMENT OF SCIENCE

MAX MARKS: 35

CLASS: XII

SUBJECT: CHEMISTRY

SAMPLE PAPER - 5

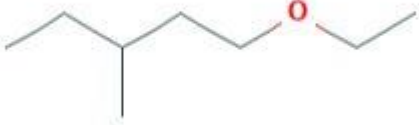
General Instructions


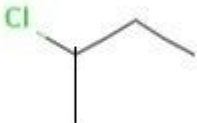
The paper consists of three sections.

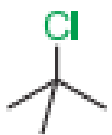
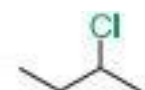
Each question carries 1 mark.

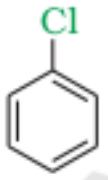
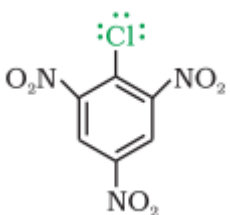
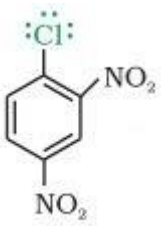
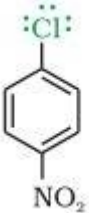
All questions are compulsory.

Q.NO	QUESTIONS	MARKS
	<p>SECTION A – CASE STUDY QUESTIONS</p> <p>Alcohols and phenols are formed when a hydrogen atom in a hydrocarbon, aliphatic and aromatic respectively, is replaced by –OH group. The boiling points of alcohols and phenols increase with increase in the number of carbon atoms (increase in van der Waals forces).</p> <p>Solubility of alcohols and phenols in water is due to their ability to form hydrogen bonds with water molecules. The reaction of phenol with aqueous sodium hydroxide indicates that phenols are stronger acids than alcohols and water. According to IUPAC system (Unit 12, Class XI), the name of an alcohol is derived from the name of the alkane from which the alcohol is derived, by substituting ‘e’ of alkane with the suffix ‘ol’.</p>	
1	<p>The compound which is most acidic among the following is _____</p> <p>a. Phenol b. p-Nitrophenol c. o-Nitrophenol d. m-Nitrophenol</p>	1
2	<p>Monochlorination of toluene in sunlight followed by hydrolysis with aqueous NaOH gives _____</p> <p>a. o-Cresol. b. m-Cresol c. p-Cresol d. Benzyl alcohol</p>	1
3	<p>The compound obtained by reaction of propene with diborane followed by hydrolysis with alkaline hydrogen peroxide is ____</p> <p>a. Prop-2-en-1-ol b. Prop-2-en-2-ol</p>	1

	c. Propan-1-ol d. Propan-2-ol	
4	The IUPAC name of the following compound is _____  a. 1-Ethoxy-2-methylbutane b. 1-Ethoxy-3-methylpentane c. 1-Ethoxy-2-methylpropane d. 4-Methoxy-3-methylbutane	1
5	Phenol can be distinguished from ethanol by _____ a. Red litmus paper b. NaHCO_3 c. NaOH d. Neutral FeCl_3	1
SECTION B – MULTIPLE CHOICE QUESTIONS		
6	The coordination number in hcp is _____ a. 6 b. 12 c. 18 d. 24	1
7	Gold has a face centred unit cell with an edge length of the cube of 407 pm. Assuming the closest packing, the diameter of the gold atom is _____ a. 576.6 pm b. 287.8 pm c. 352.5 pm d. 704.9 pm	1
8	A plant cell shrinks when it is kept in a _____ a. hypotonic solution b. hypertonic solution c. isotonic solution d. pure water	1
9	One molecule of sucrose on hydrolysis gives _____ a. 2 molecules of fructose b. 2 molecules of glucose c. 1 molecule of glucose and 1 molecule of fructose d. 1 molecule of glucose and 1 molecule of ribose	1
10	Which of the following fluorides does not exist? a. NF_5 b. PF_5 c. AsF_5 d. SbF_5	1

11	Nucleic acids are polymers of _____ a. Nucleosides b. Nucleotides c. peptides d. α -Amino acids	1
12	Which of the following reactions of glucose cannot be explained by its open chain structure? a. Glucose is oxidised by bromine water to give gluconic acid. b. Glucose reacts with acetic anhydride to form pentaacetate.. c. Glucose does not react with 2,4-Dinitrophenylhydrazine. d. Glucose is reduced to n-hexane on reaction with HI.	1
13	The number of octahedral voids present in a lattice is A. The number of tetrahedral voids generated is B. The number of closed packed structures is _____ a. A- equal, B- half b. A-twice, B- equal c. A- twice, B- half d. A- equal, B- twice	1
14	Hybridisation of S in SF ₄ and geometry of SF ₄ are respectively a. sp ³ d, trigonal pyramidal b. sp ³ d, see saw c. sp ³ , tetrahedral d. dsp ² , square planar	1
15	The osmotic pressure of a solution can be increased by a. increasing the volume b. increasing the number of solute molecules. c. decreasing the temperature d. removing semipermeable membrane	1
16	Crystalline solids are anisotropic in nature. What is the meaning of the term anisotropic? a. A regular pattern of arrangement of particles which repeats itself periodically over the entire crystal. b. Different values of some of the physical properties are shown when measured along different directions in the same crystal. c. An irregular arrangement of particles which repeats itself periodically over the entire crystal. d. Same values of some of the physical properties are shown when measured along different directions in the same crystal.	1
17	Which of the following compounds has the highest boiling points? a.  b. 	1

	<p>c.</p>  <p>d.</p> 													
18	<p>Stability of hydrides of group 16 elements</p> <p>a. increases down the group b. decreases down the group c. all hydrides are equally stable d. none of the above.</p>	1												
19	<p>A 5% solution of cane-sugar (molecular weight = 342) is isotonic with 1% solution of substance A. The molecular mass of A is _____</p> <p>a. 342 b. 171.2 c. 68.4 d. 136.8</p>	1												
20	<p>Choose the correct statements.</p> <p>a. All the three N-O bonds in HNO_3 are equal. b. The molecule of SO_2 is trigonal pyramidal. c. The boiling point increases from PH_3 to BiH_3. d. The bond angle of PH_3 is more than that of NH_3.</p>	1												
21	<p>The correct IUPAC name of the compound $(\text{C}_2\text{H}_5)_3\text{CBr}$ is _____</p> <p>a. 3-Bromo-3-ethylpentane b. 1-Bromo-3,3-diethylpropane c. 1-Bromo-1,1,1-triethylmethane d. 1-Bromo-1,1-diethylpropane</p>	1												
22	<p>Match the following</p> <table border="1" data-bbox="502 1456 1356 1691"> <thead> <tr> <th>Column I</th> <th>Column II</th> </tr> </thead> <tbody> <tr> <td>i. N_2O_5</td> <td>p. acidic</td> </tr> <tr> <td>ii. Al_2O_3</td> <td>q. basic</td> </tr> <tr> <td>iii. Fe_3O_4</td> <td>r. neutral</td> </tr> <tr> <td>iv. Na_2O</td> <td>s. amphoteric</td> </tr> <tr> <td>v. CO</td> <td>t. mixed</td> </tr> </tbody> </table> <p>a. i – p, ii – s, iii – r, iv -q, v - t b. i – r, ii – s, iii – p, iv -q, v - t c. i – t, ii – s, iii – r, iv -q, v - p d. i – p, ii – s, iii – t, iv -q, v – r</p>	Column I	Column II	i. N_2O_5	p. acidic	ii. Al_2O_3	q. basic	iii. Fe_3O_4	r. neutral	iv. Na_2O	s. amphoteric	v. CO	t. mixed	1
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v. CO	t. mixed													
23	<p>Which of the following solutions shows positive deviation from Raoult's law?</p> <p>a. Acetone + Aniline b. Acetone + Ethanol</p>	1												

	c. Water + Nitric acid d. Chloroform + Benzene	
24	When Xe reacts with Fluorine in 1:5 ratio at 873 K it forms _____ a. XeF ₂ b. XeF ₄ c. XeF ₆ d. XeOF ₄	1
25	Arrange the following compounds in the increasing order of their reactivities towards nucleophilic substitution. i.  ii.  iii.  iv..  a. i < ii < iii < iv b. ii < iii < iv < i c. i < iv < iii < ii d. i < iii < ii < iv	1
26	A compound among the following having S-O-S bond is _____ a. H ₂ S ₂ O ₇ b. H ₂ S ₂ O ₅ c. H ₂ S ₂ O ₈ d. H ₂ SO ₄	1
27	Consider two reactions I. 2NaOH + Cl ₂ → NaCl + X + H ₂ O (cold and dilute) II. 6NaOH + 3Cl ₂ → 5 NaCl + Y + 3H ₂ O	1

	<p>a. X- NaClO₃, Y - NaOCl b. X – NaClO₂, Y – NaOCl c. X – NaOCl, Y - NaClO₃ d. X – NaOCl, Y – NaClO₂</p>	
28	<p>In proteins, amino acids are linked by a specific sequence. This sequence of amino acids is known as _____</p> <p>a. primary structure of proteins b. secondary structure of proteins c. tertiary structure of proteins d. quaternary structure of proteins</p>	1
29	<p>The group 15 hydride which is the strongest reducing agent among the following is _____</p> <p>a. NH₃ b. PH₃ c. AsH₃ d. SbH₃</p>	1
30	<p>Salt X + slaked lime forms colourless gas that gives dense white fumes with conc. HCl. The salt X could be</p> <p>a. Barium nitrate b. Ammonium chloride c. Copper sulphate d. Calcium phosphate</p>	1
	ASSERTION REASON TYPE	
31	<p>Assertion: No compound has both Schottky and Frenkel defects. Reason: Schottky defect changes the density of solid</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: Elevation in boiling point for two isotonic solutions may not be same. Reason: Boiling point depends upon the concentration of the solute.</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
33	<p>Assertion: O₃ acts as a powerful oxidising agent. Reason: O₃ oxidises lead sulphide to lead sulphate & iodide ions to iodine.</p> <p>a. Assertion and Reason are both correct and Reason is the correct explanation of</p>	1

	<p>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>	
34	<p>Assertion: Treatment of chloroethane with a saturated solution of AgCN gives ethyl isocyanide as a major product.</p> <p>Reason: Cyanide ion (CN^-) is an ambident nucleophile.</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: At isoelectric point, the amino group does not migrate under the influence of electric field.</p> <p>Reason: At isoelectric point, amino acid exists as a zwitterion.</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	b	13	a	25	c
2	d	14	b	26	a
3	c	15	b	27	c
4	b	16	b	28	a
5	d	17	a	29	d
6	b	18	b	30	b
7	b	19	c	31	d
8	b	20	c	32	c
9	c	21	a	33	b
10	a	22	d	34	b
11	b	23	b	35	a
12	c	24	c		