

ASIAN SCHOOL, DEHRADUN

Test Paper Session 2017-18

CLASS 10

SUBJECT Chemistry Chapter-1 (Equations & Reactions)

Q1.	Why is respiration considered an exothermic process?	1
Q2.	Why should magnesium ribbon be cleaned before burning?	1
Q3.	What is a balanced chemical equation?	1
Q4.	Name two antioxidants which are usually added to fat and oil containing foods to prevent rancidity.	1
Q5.	What is a redox reaction? Give one example.	1
Q6.	What happens when silver chloride is exposed to sun light? Write a chemical equation for this reaction. Also give one use of such a reaction.	2
Q7.	In the reaction represented by following equation : $\text{CuO(s)} + \text{H}_2\text{(g)} \longrightarrow \text{Cu(s)} + \text{H}_2\text{O(l)}$ a) Name the substance oxidized and reduced. b) Name the oxidizing and reducing agent.	2
Q8.	What type of reaction is when zinc dipped into a copper sulphate solution? Write the equation for the reaction that takes place.	2
Q9.	a) What is the colour of ferrous sulphate crystal? How does this colour change after heating? b) Name the product formed on strongly heating ferrous sulphate crystals. What type of chemical reaction occurs in this change?	2
Q10.	Write any two observations in any activity which may suggest that chemical reaction has taken place. Give an example to support your answer.	2
Q11.	a) Explain, with example how the physical states of the reactants and products can be shown in a chemical equation. b) Balance the equation and add state symbols : $\text{Zn} + \text{HCl} \longrightarrow \text{ZnCl}_2 + \text{H}_2$ c) Write balanced equation for : Sodium hydroxide reacts with sulphuric acid to produce sodium sulphate and water.	3
Q12.	Balance the following equation and write their type : i) $\text{H}_2\text{O}_2 \longrightarrow \text{H}_2\text{O} + \text{O}_2$ ii) $\text{Fe} + \text{O}_2 \longrightarrow \text{Fe}_2\text{O}_3$ iii) $\text{Al}_2(\text{SO}_4)_3 + \text{NaOH} \longrightarrow \text{Al}(\text{OH})_3 + \text{Na}_2\text{SO}_4$	3
Q13.	Gas A, which is the major cause of Global Warming combines with hydrogen oxide B in nature in the presence of environmental factor C and green compound E and a gas F. The gas F is necessary for breathing. i) What is gas A? ii) What is the common name of B? iii) What do you think could be C? iv) What do you think could be D and where is it found?	3
Q14.	When metal X is treated with a dilute acid Y, then a gas Z is evolved which burns readily by making a little explosion. a) Name any two metals like X and two acids like Y. b) Name the gas Z and write chemical equation.	3
Q15.	When a solution of substance X is added to a solution of potassium iodide, then yellow solid separates out from the solution. i) What do you think substance X is likely to be? ii) Name the substance which the yellow solid consists of. iii) Which characteristic of chemical equation is illustrated by this example?	3

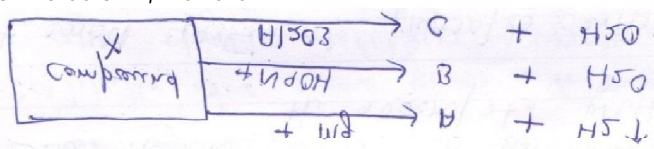
Q16.	<p>A silvery white metal X taken in the form of ribbon when ignited, burns in air with a dazzling white flame to form a white powder Y. When water is added to powder Y, it dissolves partially to form another substance Z.</p> <p>i) What could metal X and Powder Y be? ii) With which substance metal X combines to form Y. iii) Write is substance Z and one domestic use of substance Z? iv) Write balanced chemical equation for above process.</p>	5
Q17.	<p>White compound A decomposes quite rapidly on heating in the presence of a black substance X to form a solid compound B and a gas C when an aqueous solution of compound B is reacted with silver nitrate solution. Then white precipitate of silver chloride is obtained with potassium nitrate solution. Gas C does not burn itself but helps burn other things.</p> <p>i) What is compound A? ii) What is compound B? iii) What is gas C? iv) What is black substance X and what is it function? v) What is general name of substance like X.</p>	5
Q18.	<p>When a black metal compound XO is heated with a colourless gas y_2, then metal X and another compound Y_2O are formed. Metal X is brown in colour which does not react with dilute acids at all. Gas Y_2 can be prepared by the action of a dilute acid on any active metal. The compound Y_2O is liquid at room temperature which can turn anhydrous copper sulphate blue.</p> <p>i) What do you think is metal X? ii) What could be gas Y_2? iii) What is compound XO? iv) Write the chemical equation of the reaction which taken on heating XO and Y_2. v) What type of chemical reaction in the above equation?</p>	5
Q19.	<p>When hydrogen burns in oxygen, water is formed and when water is electrolysed, then hydrogen and oxygen are produced. What type of reaction takes place:</p> <p>i) First Case ii) Second Case iii) Which gas will be formed more and why? iv) Write the cathode and anode equations in the reaction.</p>	5
Q20.	<p>A red brown metal X form a salt XSO_4. When H_2S passed through an aqueous solution of XSO_4, then a black precipitate of XS is formed along with sulphuric acid solution :</p> <p>i) What could salt XSO_4 be? ii) What is the colour of salt XSO_4? iii) What type of chemical reaction takes place in this case? iv) Write the equation of reaction which takes place when hydrogen sulphide gas is passed through its aqueous solution.</p>	5


THE ASIAN SCHOOL, DEHRADUN

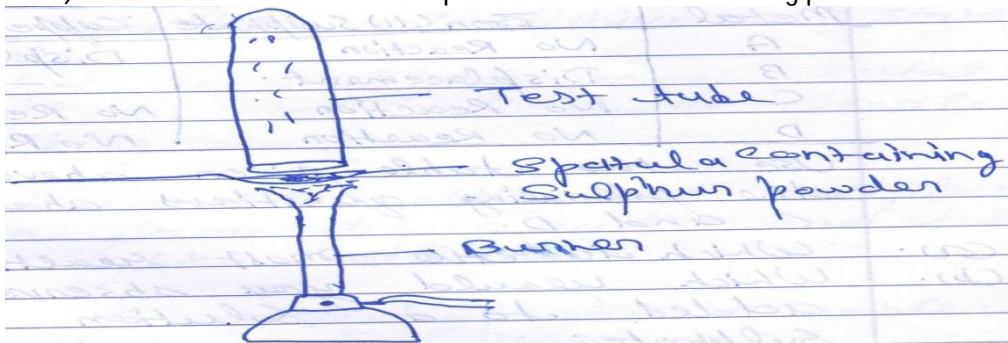
Test Paper Session 2017-18

CLASS 10 SUBJECT Chemistry Chapter-2 (Acids Base and Salts)

Q1.	What happens when Nitric acid added to egg shell? Give Chemical Reaction.	1
Q2.	Match the acids given in column (a) with their correct source given in column (b) Column A a) Lactic Acid b) Acetic Acid c) Citric Acid d) Oxalic Acid Column B Tomato Lemon Vinegar Curd	1
Q3.	Name the acid present in ant sting and give chemical formula. Also give the common method to get relief from the discomfort caused by the ant sting.	1
Q4.	A milkman adds a very small amount of baking soda to fresh milk. a) Why does he shift the PH of the fresh milk from 6 to slightly alkaline. b) Why does this milk take a long time to set as curd?	1
Q5.	What are strong and weak acids? In the following list of acids, separate strong acid from weak acids. Hydrochloric acid, citric acid, acetic acid, Nitric acid, formic acid, sulphuric acid.	1
Q6.	What happens when carbon dioxide gas is passed through lime water? What happens when excess of CO ₂ is passed? Give chemical reactions involved.	1
Q7.	Answer the following : a) An aqueous solution has a PH value of 7.0. Is this solution acidic, basic or Neutral? b) If H ⁺ concentration of the solution is 1X10 ⁻² mol/L. What is the PH value of it. c) Which has a higher PH value, 1M HCl or 1M NaOH solution.	3
Q8	A tarnished copper vessel begins to shine again when rubbed with lemon. Why?	3
Q9	What happens when a metal, metal oxide and metal hydrogen carbonate reacts with an acid? Give chemical reaction for all.	3
Q10	Write word equations and then balanced equations for the reactions taking place when : a) Dilute sulphuric acid reacts with Zinc Granules. b) Dilute sulphuric acid reacts with aluminium powder. c) Dilute hydrochloric acid reacts with Iron Fillings.	3
Q11	Give the chemical equation between : a) Plaster of Paris and Water. b) Zinc and NaOH. c) Magnesium and Acetic Acid.	3
Q12	Equal lengths of magnesium ribbons are taken in test tubes A and B. Hydrochloric acid (HCl) is added to test tube A. While acetic acid (CH ₃ COOH) is added to test tube (B). In which test tube will the fizzing occur more vigorously and why? Also give chemical reactions of the process.	3
Q13	For making cake, baking powder is taken. If at home, your mother uses baking soda instead of baking powder in cake : a) How will it affect the taste of the cake and why? b) How can baking soda be converted into baking powder. c) What is the role of tartaric acid added to baking soda.	3
Q14	a) Write the chemical formula of hydrated copper sulphate and anhydrous copper sulphate. b) Give the chemical name and formula of Bleaching Powder. c) Give the formula of washing soda.	3
Q15	State the chemical properties on which the following uses of baking soda are based: a) As an antacid. b) As a soda acid fire extinguisher. c) To make bread and cake soft and spongy.	3

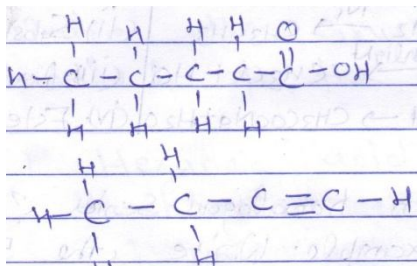
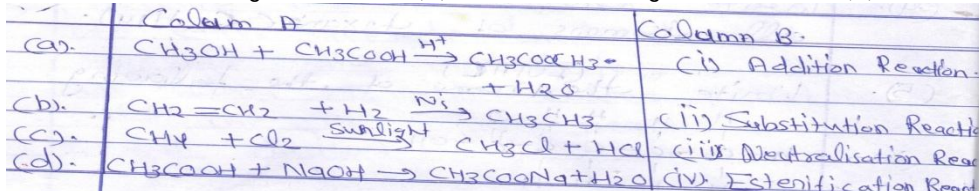
Q16	<p>a) Write the name given to bases that are highly soluble in water. Give an example.</p> <p>b) How can tooth decay related to PH? How can it be prevented?</p> <p>c) Why does bee sting cause pain and irritation? Rubbing at baking soda on the sting area gives relief. How?</p>	3
Q17	"Sodium Hydrogencarbonate is a basic salt". Justify the statement. How it is converted into washing soda? Explain.	3
Q18	Dry pellets of base 'X' when kept in open absorbs moisture and turns sticky. The compound is also formed by chlor alkali process. Write the chemical name and formula of 'X'. Describe chlor alkali process with balanced chemical equations. Name the type of reaction occurs when X treated with dilute hydrochloric acid. Write chemical equation (ii) while diluting an acid, why it is recommended that the acid should be added to water and not water to the acid.	
Q19	Compounds like alcohols and glucose also contain hydrogen but are not categorised as acid. Discuss an activity to prove it.	5
Q20	<p>a) Define olfactory indicators. Name two substances which can be used as olfactory indicators.</p> <p>b) Choose the organic acid in the following : CH_3COOH, H_2SO_4, HNO_3,</p> <p>c) Why copper sulphate blue colour disappeared on heating. Give chemical reaction.</p>	5
Q21	<p>State the reason for the following statements :</p> <p>a) Tap water conducts electricity whereas distilled water does not.</p> <p>b) Dry HCl do not turn blue litmus into red.</p> <p>c) Ammonia is a base but not contain hydroxyl group.</p> <p>d) During the summer season, a milk man usually adds a very small amount of baking soda to fresh milk.</p> <p>e) For dilution at H_2SO_4, it is added to water not water added to it.</p>	5
Q22	<p>Identify the compound 'X' on the basis of the reactions given below. Also write name and chemical formulas of A, B and C.</p>  <p>The diagram shows a box labeled 'X Compound' with three arrows pointing to the right. The first arrow is labeled 'H₂SO₄' and points to 'C + H₂O'. The second arrow is labeled 'HCl' and points to 'B + H₂O'. The third arrow is labeled 'Fe' and points to 'A + H₂O'.</p>	5
Q23	What is neutralization reaction? Categorise acidic, basic and Neutral (Normal) salt with example.	5
Q24	<p>How PH play an important role in the following. Give example.</p> <p>a) Tooth decay</p> <p>b) Digestive system</p> <p>c) Self defense at animal and plant by chemical warfare.</p> <p>d) Regaining shine at a tarnishing copper vessels.</p>	5
Q25	<p>The PH of the gastric juice released during digestion is :</p> <p>a) >7 b) <7 c) Equate d) Equal to zero</p>	1
Q26	<p>Which at the following used for dissolution of gold:</p> <p>a) HCl b) H_2SO_4 c) HNO_3 d) Aqua Regia</p>	1
Q27	<p>Which among the following is not a base :</p> <p>a) NaOH b) NH_4OH c) KOH d) $\text{C}_2\text{H}_5\text{OH}$</p>	1
Q28	<p>Which one of the following can be used as an acid base indicator by a visually impaired student :</p> <p>a) Litmus b) Turmeric c) Vanilla Essence d) Petunia Leaves</p>	1
Q29	<p>Common salt besides being used in kitchen can also be used as the raw material for making :</p> <p>a) Washing Soda b) Bleaching Powder c) Baking soda d) Slaked Lime</p> <p>A) (i) & (ii) B) (i), (ii) & (iii) c) (i) & (iii) d) (i), (iii) & (iv)</p>	1

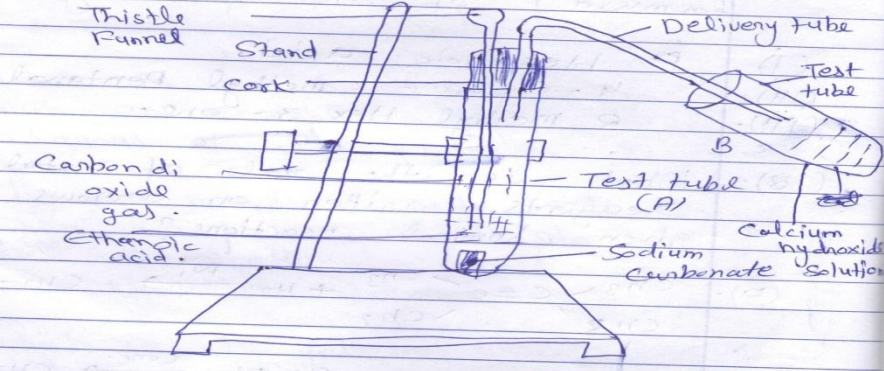
Q30	Which of the following gives correct strength? a) Water < Acetic Acid < Hydrochloric Acid b) Water < Hydrochloric Acid < Acetic Acid c) Acetic Acid < Water < Hydrochloric Acid d) Hydrochloric Acid < Water < Acetic Acid	1
Q31	Which of the following salts does not contain water at crystallization: a) Blue Vitriol b) Baking Soda c) Washing Soda d) Crypsum	1
Q32	Which of the following is acetic in nature: a) Lime Juice b) Human Blood c) Washing Soda d) Crypsum	1
Q33	Which of the following present in a dilute aqueous solution of Hydrochloric acid : a) $H_3O^+ + Cl^-$ b) $H_3O^+ + OH^-$ c) $Cl^- + OH^-$ d) Unionized HCl	1
Q34	The following symbols are usually shown on the bottles of commercial acetic acid.  The symbols indicate that acetic acid is : a) Corrosive and Flammable b) Radioactive and Flammable c) Oxidising and Corrosive d) Flammable and Explosive	2
Q35	A student dropped few pieces of marble in dilute hydrochloric acid, contained in a test tube. The evolved gas was then passed through lime water. What change would be observed in lime water? What will happen if excess gas is passed through lime water? With the help of balanced chemical equations for all the changes explain the observations.	2
Q36	Write two precautions to be taken while using acetic acid in laboratory.	2

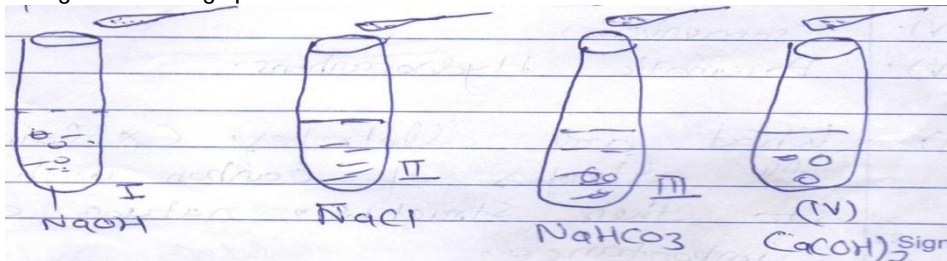
Q16	<p>Samples of four metals A,B,C and D were taken and added to the following solutions one by one. The results obtained have been tabulated as follows :</p> <table border="1"> <thead> <tr> <th>Metal</th> <th>Iron (II) Sulphate</th> <th>Copper (II) Sulphate</th> <th>Zinc Sulphate</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>No Reacion</td> <td>Displacement</td> <td>-</td> </tr> <tr> <td>B</td> <td>Displacement</td> <td>-</td> <td>No Reaction</td> </tr> <tr> <td>C</td> <td>No Reaction</td> <td>No Reaction</td> <td>No Reaction</td> </tr> <tr> <td>D</td> <td>No Reaction</td> <td>No Reaction</td> <td>No Reaction</td> </tr> </tbody> </table> <p>Use the table given above the answer the following questions about metals A,B, C and D.</p> <ol style="list-style-type: none"> Which is the most reactive metal? Which would you observe when B added to a solution of Copper (ii) sulphate. Arrange the metal A, B, C and D in order at decreasing reactivity. 	Metal	Iron (II) Sulphate	Copper (II) Sulphate	Zinc Sulphate	A	No Reacion	Displacement	-	B	Displacement	-	No Reaction	C	No Reaction	No Reaction	No Reaction	D	No Reaction	No Reaction	No Reaction	3
Metal	Iron (II) Sulphate	Copper (II) Sulphate	Zinc Sulphate																			
A	No Reacion	Displacement	-																			
B	Displacement	-	No Reaction																			
C	No Reaction	No Reaction	No Reaction																			
D	No Reaction	No Reaction	No Reaction																			
Q17	What are alloys and which metals do not corrode and why?	3																				
Q18	Define the terms : a) Minerals b) Ore c) Gangue	3																				
Q19	<p>Pratyush took sulphure powder on a spatula and heated it. He collected the gas evolved by investing a test tube over it as shown in figure below :</p> <ol style="list-style-type: none"> What will be the action of gas on (i) dry litmus paper? (ii) Meist Litmus paper? Write a balanced chemical equation for the reaction taking place. 	5																				
Q20	What are amphoteric oxide? Give two example and two chemical reactions at amphoteric oxide?	5																				
Q21	Differentiate between metals and non metals on the basis of chemical properties.	5																				
Q22	<p>Explain the following :</p> <ol style="list-style-type: none"> Reactivity of Al decreases if it is dipped in HNO_3. NaCl not a conductor of electricity in solid state whereas. It does conduct electricity in aqueous solution as well as in molten state. Iron articles are galvanized. Metals like Na,K,Ca and Mg are never found in their free state in nature. 	5																				
Q23	<p>Given below are the steps for extraction of copper from its ore. Write the reaction involved.</p> <ol style="list-style-type: none"> Roasting of copper (I) sulphide Reduction of Copper (I) oxide with copper (I) Sulphite Electrolytic Refining Draw a neat and well labelled diagram for electrolytic refining of copper. 	5																				
Q24	An element A burns with golden flame in air. It reacts with another element B, atomic number 17, to give the product C. An aqueous solution of product C. on electrolysis gives a compound D and liberates hydrogen. Identify A,B,C and D. Also write down the equations for the reactions involved.	5																				
Q25	When you place iron nail in copper sulphate solution, the reddish brown coating formed on the nail is : a) Soft and dull b) Hard and flaky c) Smooth and Shining d) Rough and granular	1																				
Q26	<p>Copper sulphate solution is added to a test tube containing a clean iron nail. The correct description regarding the deposition of copper on the iron nail would be that it starts depositing.</p> <ol style="list-style-type: none"> At the top of the nail From the head of the nail In the middle of the nail Anywhere on the nail 	1																				

Q27	Two beakers A and B contains iron (II) sulphate solution. In the beaker A is placed a small piece of copper and in the beaker B is placed small piece of zinc. It is found that a grey deposit form on the zinc but not on copper from these observations, it can be concluded that : a) Zinc is most active metal followed by iron and copper. b) Iron is most active metal followed by copper and then iron. c) Iron is most active metal followed by zinc and then copper d) Iron is most active metal followed by copper and then zinc.	1
Q28	10 ml of freshly prepared iron sulphate solution was taken in each of the four test tubes. Strips of copper, iron, zinc and aluminium were introduced, each metal in a different test tube. A black residue was obtained in two of them. The right pair of metals forming the precipitates is. a) Copper & Zinc b) Aluminium & Copper c) Iron & Aluminium d) Zinc & aluminium	1
Q29	Generally, non metals are not lustrous. Which of the following non metal is lustrous : a) Sulphur b) Oxygen c) Nitrogen d) Iodine	1
Q30	Which of the following are not ionic compounds : a) KCl b) HCl c) CCl ₄ d) NaCl A) (i) & (ii) B) (ii) & (iii) C) (iii) & (iv) D) (i) & (iii)	1
Q31	The ability of metals to be drawn into thin wire is known as : a) Ductility b) Malleability c) Sonorousity d) Conductivity	1
Q32	Generally metals reacts with acids to give hydrogen gas and salt of metal. Which of the following acids does not give hydrogen gas on reacting with metals (except Mn and Mg) a) H ₂ SO ₄ b) HCl c) HNO ₃ d) All of these	1
Q33	The composition of aqua- regia is : a) Dil HCl : Conc. HNO ₃ 3 b) Conc. HCl : Dil HNO ₃ 3 c) Conc. HCl : Conc HNO ₃ 3 d) Dil HCl : Dil HNO ₃ 3	1
Q34	To test that metals are good conductors of heat and have high melting points: a) Take an aluminium or copper wire clamp the wire on a stand as shown it. b) Fix a pin to the free end of the wire using wax. c) Heat the wire with a spirit lamp, candle or a burner near the place where it is clamped. Now answer. a) What do you observe after some time? b) Does the metal wire melt?	2
Q35	Collect all the metal samples except sodium and potassium. If the samples are tarnished, rub them clean with sand paper. <ul style="list-style-type: none"> • CAUTION : Do not take sodium and potassium as they react vigorously even with cold water. • Put the sample separately in the test tubes so that their bulbs are dipped in the acid. • Observe the rate of formation of bubbles carefully. Now Answer : a) Which metals reacted vigorously with dilute hydrochloric acid? b) With which metal did you record the highest temperature?	2
Q36	Arrange the metals in the decreasing order of reactivity with dilute acids.	2

CLASS 10 **SUBJECT Chemistry** **Chapter-4 (Carbon and Its Compounds)**

Q1	Draw the structure of Butanone.	1
Q2	Why detergents are better cleansing agent than soap?	1
Q3	Draw the electron dot structure of S8.	1
Q4	Write the structural formulae of all isomers of hexane (C ₆ H ₁₄).	2
Q5.	Write the IUPAC name of the following : 	2
Q6	What is saponification? Write the reaction involved in this process.	2
Q7.	What are hydrocarbons? Differentiate between Saturated and Un-saturated hydrocarbons with examples.	3
Q8	Explain the given reactions with examples. a) Oxidation Reaction b) Combustion Reaction	3
Q9	In electron dot structure, the valance shell electrons are represented by crosses or dots. a) The atomic number of chlorine is 17. Write electronic configuration. b) Draw the electron dot structure of chlorine and carbon di oxide molecule.	3
Q10	Match the reactions given column (A) with the names given in column (B). 	3
Q11	What is an homologous series? Explain with an example. Write the 5 homologous of the formula C _n H _{2n-2} .	3
Q12	Why does micelle formation take place when soap is added to water? Will a micelle be formed in other Solvents like ethanol also?	3
Q13	Which of the following hydrocarbons undergo addition reactions? Give reaction with hydrogen of each. C ₂ H ₆ , C ₃ H ₈ , C ₃ H ₆ , C ₂ H ₂ and CH ₄	3
Q14	How would you distinguish experimentally between an alcohol and a carboxylic acid. Give two chemical test for differentiation.	3
Q15	Why carbon do not exist in ionic form. Discuss versatile nature of carbon on the basis of catenation and tetravalency.	3
Q16	What is scum? Give chemical reaction of scum formation. What is the advantage of synthetic detergents over soap.	3
Q17	Write the structure (bond line formula) of the following. a) Hexanoic acid b) 4- Chloro – 3 Methyl Pentanal c) 2 Methyl Hex 3- one.	3

Q18	<p>What is the role of metal or reagents written on arrows in the given chemical reactions?</p> <p>(a). $\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\ \diagdown \quad / \\ \text{C} = \text{C} \\ / \quad \diagdown \\ \text{CH}_3 \quad \text{CH}_3 \end{array} + \text{H}_2 \xrightarrow{\text{Ni}} \begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\ \quad \\ \text{CH}_2 - \text{C} - \text{C} - \text{CH}_3 \\ \quad \\ \text{CH}_3 \quad \text{CH}_3 \end{array}$</p> <p>(b). $\text{CH}_3\text{COOH} + \text{C}_2\text{H}_5\text{CH}_2\text{OH} \xrightarrow[\text{H}_2\text{SO}_4]{\text{conc.}} \text{CH}_3\text{COOC}_2\text{H}_5 + \text{H}_2\text{O}$</p> <p>(c). $\text{C}_2\text{H}_5\text{CH}_2\text{OH} \xrightarrow[\text{Heat}]{\text{A.K.K.MnO}_4} \text{CH}_3\text{COOH}$</p>	3
Q19	<p>Look the figure and answer the following questions :</p> <ol style="list-style-type: none"> What change would you observe in the calcium hydroxide solution taken in test tube B? Write the reaction involved in tubes A and B respectively. If ethanol is given instead of ethanoic acid, would you observe the same change. How can a solution of lime water be prepared in the laboratory. 	3
Q20	<p>Draw the possible isomers of the compound with molecular formula $\text{C}_3\text{H}_6\text{O}$ and also give their electron dot structure. Mention all cycle and acyclic isomers.</p>	3
Q21	<p>An organic compound A on heating with conc H_2SO_4 forms a compound B. Which on addition of 1 mole of Hydrogen in presence of Ni forms a compound C. One mole of compound C on combustion forms two moles of CO_2 and 3 moles of H_2O. Identify the compounds A, B, and C and write the chemical equation of the reactions involved.</p>	3
Q22	<p>A compound C molecular formula, $(\text{C}_2\text{H}_4\text{O}_2)$ reacts with Na - Metal to form a compound R and evolves a gas which burns with pop sound. Compound C on treatment with an alcohol. A in presence of an acid forms a sweet smelling compound S (molecular formula $\text{C}_3\text{H}_6\text{O}_2$). On addition of NaOH to C, it also gives R and water S on treatment with NaOH solution gives back R and A.</p>	3
Q23	<p>Write note on the following :</p> <ol style="list-style-type: none"> Etherification Reaction Cleansing agent Denatured Alconals Isomerism Aromatic Hydrocarbons 	3
Q24	<p>What are allotropes. Explain the all allotropes of carbon with references to their structure, nature and importance.</p>	3

Q25	Vegetable oils such as soyabean oil, groundnut oil, sunflower oil, cottonseed oil etc develop unpleasant smell and taste. When kept for a long time in a hot water. Therefore, Oils are hydrogenated in the pressure of Nickel as catalyst, to form vegetable ghee. However, vegetable ghee contains saturated carbon chains which are not good for health as advised by the doctor. Now answer the following questions : a) What is hydrogenation? b) What changes occur during hydrogenation of vegetable oils. c) What type of health problem is caused by consumption of saturated fats and how can this problem be checked?	3
Q26	A student added acetic acid to test tubes I,II, III and IV containing the labelled substances and then brought a burning splinter near the mouth of each test tube.  The splinter would be extinguished when brought near the mouth of test tube : a) I b) II c) III d) IV	1
Q27	Detergents can be used in hard water because : a) Only calcium salts of detergents are soluble in water. b) Only magnesium salts of detergents are soluble in water. c) Both calcium and magnesium salts of detergents are soluble in water. d) Both sodium and potassium salt of detergents are soluble in water.	1
Q28	Hard water does not easily produce lather with soap because it contains : a) Only Mg^{2+} ions b) Only Ca^{++} ions c) Both Mg^{2+} and Ca^{++} d) both Na^+ and K^+ .	1
Q29	What happens when red litmus solution is added to acetic acid : a) The red colour will change to blue. b) The red colour will not change c) Red colour will change to green d) The solution becomes colourless	1
Q30	The molecular formula of acetic acid is : a) C_2H_4O b) C_2H_6O c) $C_2H_4O_2$ d) CH_2O	1
Q31	Glacial acetic acid is : a) 5.8% acetic acid b) 50% acetic acid c) 100% acetic acid d) Acetic acid of any concentration	1
Q32	You are given castor oil How will you prepare soap from it? Write the procedure briefly. How a soap chemistry different from detergent.	2
Q33	Dilute sodium hydroxide is added to ethyl acetate and heated. Explain the products formed. What is this reaction called? What is the use of this reaction in soap industry? Explain.	2
Q34	What is vinegar? Write the name, functional group and structure of chemical compound present in it. What happens when a solution of sodium carbonate is added to it.	2

THE ASIAN SCHOOL, DEHRADUN

Test Paper Session 2017-18

CLASS 10 **SUBJECT Chemistry** **Chapter-5(Periodic Classification of Elements)**

Q1	The three elements A,B and C with similar properties have atomic masses X,Y and Z respectively. The mass of Y is approximately equal to the average mass of X and Z. What is such an arrangement of elements called as? Give one example of such a set of elements.	1
Q2	Write the formulae of chlorides of Eka-silicon and Eka-aluminium, the elements predicted by Mendeleev's.	1
Q3	In Mendeleev's periodic table, the elements were arranged in the increasing order of their atomic masses. However, cobalt with atomic mass of 58.93 amu was placed before nickel having an atomic mass of 58.71 amu. Give reason for the same.	1
Q4	Compare the radii of two species X and Y. Give reasons for your answer. a) X has 12 protons and 12 electrons. b) Y has 12 protons and 10 electrons.	1
Q5.	In each of the following pairs choose the atom having the bigger size : a) Mg (At. No. 12) Or Cl(At. No. 17) b) Na (At. No 11) Or K(At. No. 19)	1
Q6	Properties of the elements are given below. Where would you locate the following elements in the periodic table? a) A soft metal stored under kerosene b) An element which is tetravalent and forms the basis of organic chemistry. c) A element which is an inert gas with atomic no 2. d) An element whose thin oxide layer is used to make other elements corrosion resistant by the process of anodizing. e) A total of two shells with three e ⁻ in its valence shell.	2
Q7	Which element has : a) Two shells, both of which are completely filled with electrons. b) The electronic configuration 2,8,2? c) Twice as many electrons in its second shell as its first shell. d) A total of two shells with three e ⁻ in its valence shell.	2
Q8	The atomic masses of three elements X, Y and Z having similar chemical properties are 7, 23 and 39 respectively. a) Calculate the average atomic mass of elements X and Z. b) How does the average atomic mass of elements X and Z compare with the atomic mass of element Y. c) Which law of classification of elements is illustrated by this examples. d) What could the elements X, Y and Z be?	2
Q9	The atomic numbers of three elements A,B and C are given below : Element Atomic Number A 5 B 7 C 10 (i) Which element belongs to gr 18? (ii) Which element belongs to gr15? (iii) Which element belongs to gr13? (iv) To which period/ periods do these elements belongs.	2

Q10	An element X combines with oxygen to form an oxide XO. This oxide is electrically conducting: a) How many electrons would be there in the outermost shell of the element X? b) To which group of the periodic table does the element X belong. c) Write the formula of the compound formed when X reacts with chlorine.	2
Q11	An element X (atomic no 17) reacts with an element Y (atomic no 20) to form a divalent halide: a) Where in the periodic table are elements X and Y placed? b) Classify X and Y as metals, nonmetals, or metalloid. c) What will be the nature of oxide of element Y? Identify the nature of bonding in the compound formed.	3
Q12	An element placed in 2 nd gr and 3 rd period of the periodic table, burns in presence of oxygen to form a basic oxide. a) Identify the element b) Write the electronic configuration c) Write the balanced equation when it burns in the presence of air d) Write a balanced equation when this oxide is dissolved in water. e) Draw an electron dot structure for the formation of this oxide.	3
Q13	A non-metal X which is the largest constituent of air combines with hydrogen when heated in the presence of iron as catalyst to form a gas Y. When gas Y is treated with sulphuric acid, it forms a compound Z which is used as chemical fertilizer. a) What are X, Y and Z. b) To which group of periodic table does X belong? c) Name the period of periodic table in which X is placed. d) Which element is placed just before X in the period? e) Which element is placed just after X in the period?	3
Q14	An element X from group 2 of the periodic table reacts with an element Y from group 17 to form a compound. a) What is the nature of the compound formed? b) State whether the compound formed will conduct electricity or not. c) Give the formula of the compound formed. d) What is the valency of element X? e) How many electrons are there in the outermost shell of an atom of element Y?	5
Q15	An element Y is in second period and group 16 of the periodic table : a) It is a metal or non-metal? b) What is the number of valence electrons in its atom? c) What is its valency? d) What is the name of the element? e) What will be the formula of the compound formed by Y with sodium?	5