SARALA BIRLA ACADEMY BANGALORE

FINAL EXAMINATIONS 2008 – 2009
Chemistry
(One and Half Hours)

Grade VII **Tuesday, 17/032/2009**

Answers to this Paper must be written on this paper itself.
*You will **not** be allowed to write during the first **15** minutes.*
This time is to be spent in reading the question paper.
No further queries will be entertained after this period.

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*This Paper is divided into **two** parts, Section I and Section II.*
***Section I** (40 marks) contains short answer questions set from the entire syllabus.*
*You are required to answer **ALL** questions. **Section II** (40 marks) six questions*
You are required to answer four Questions from Section II.
The intended marks for questions or parts of questions are given in brackets []

Name of the student: ……

School number: ……

SECTION I (40 Marks)
Attempt **ALL** *the questions*

Question 1: Give the formula of the following ions **[5]**

a) Sulphate ion

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b) Potassium ion

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c) Sodium ion

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d) Carbonate ion

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e) Nitrate ion

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Question 2: Give the chemical formula of the following compounds [5]

a) Sodium hydroxide

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b) Calcium carbonate

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c) Magnesium chloride

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d) Ammonium chloride

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e) Potassium nitrate

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Question 3: Balance the following chemical equations and write down the balanced chemical equations at the given space provide below [10]

a) $Na_2O + H_2O \longrightarrow NaOH$

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b) $Zn + HCl \longrightarrow ZnCl_2 + H_2$

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c) $P_4 + O_2 \longrightarrow P_2O_5$

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d) $Na + H_2O \longrightarrow NaOH + H_2$

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e) $Na + O_2 \longrightarrow Na_2O$

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Question 4: The word equation for preparing oxygen gas in the laboratory is given as follows

[Hydrogen peroxide $\longrightarrow$ water + oxygen]

a) Write a chemical equation for the above word equation: [1]

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b) Balance the above chemical equation by rewrite the above chemical equation in the given space (you may use back side of this paper for rough work, don't show any work here, if any) [2]

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c) What is the molecular mass of the hydrogen peroxide? [2]

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d) What type of reaction is the above reaction? [1]

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e) What is the percentage of oxygen in hydrogen peroxide? [2]

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f) A catalyst is use in the above reaction of preparing oxygen from hydrogen peroxide. Name the catalyst. [1]

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g) Hydrogen peroxide, which is a liquid does not get mixed up with another liquid kerosene, if in a laboratory experiment you have mixed up both hydrogen peroxide and kerosene, how will you separate them to get both hydrogen peroxide and kerosene separately [1]

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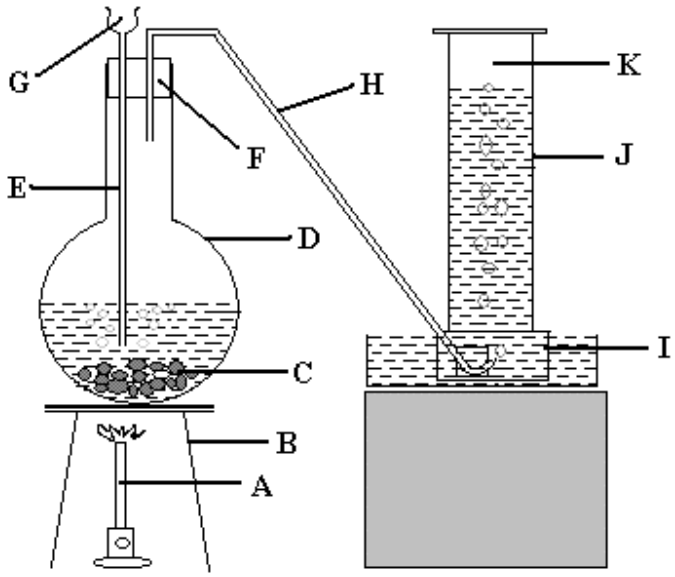
Question 5:

a) The following apparatus is used for the preparation of oxygen gas in the laboratory where C is a catalyst, for the reaction, Name the various apparatus indicated by various letters from A to K in the following given space [10]



[Here is a small note for your clarification: the diagram shows, G is the liquid which you pass inside D through apparatus E. F helps to avoid the product to escape. C is the catalyst, which is place inside D which is placed on top of B to get heated by A. H helps to pass the product K formed from the reaction to the other end where it goes through I and gets collected in J. Identify all elements A through K]

A ..... **F** .....

B ..... **G** .....

C ..... **H** .....

D ..... **I** .....

E ..... **J** .....

SECTION II

(*Attempt any FOUR questions from this section*)

Question 6:

a) Give example of two weak acids and two strong acids [2]

b) Differentiate between acids and alkali [4]

c) What do you mean by the term ductility and malleability of a metal [2]

d) State your observation when [2]

i) a blue litmus paper is dipped into hydrochloric acid solution

ii) A piece of zinc is added to dilute hydrochloric acid

Question 7:

a) Give a reason why sulphuric acid is a strong acid and acetic acid is a weak acid [2]

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b) Select the correct answers from the following to match the following
[List: SO_2, HgO, $Fe_2O_3.2H_2O$, O_2, Na_2O] [5]

i) A metallic oxide which on heating gives metal and oxygen ……

ii) A neutral gas slightly heavier than air and slightly soluble in water ……

iii) A substance which dissolves in water forming sodium hydroxide ……..

iv) A substance which dissolves in water forming sulphurous acid …….

v) A hydrated oxide generally termed as rust ……..

c) Write three uses of oxygen gas other than normal respiration [3]

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Question 8:

a) Complete the statements by selecting the correct words from the list of words [4]

i) The valency of an element is always a [whole number/ Fraction]

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ii) The acid whose formula is HNO_3 is [hydrochloric acid / sulphuric acid / Nitric acid]

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iii) The formula of lead dioxide is [PBO/ PbO_2 /PBo_2/ PbO]

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iv) The law of conservation of matter states that the matter is neither /either created or /nor destroyed during a chemical change

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b) State one source of the following acids [4]

i) Citric acid

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ii) Hydrochloric acid

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iii) Acetic acid

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iv) Malleic acid

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c) Explain the term 'neutralisation reaction' with suitable example [2]

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Question 9:

a) State true and false and if false write the correct statement. [5]

i) In a chemical equation the products are written on the left hand side and the reactants are written on the right hand side with an arrow in between ……..

ii) Electrons are present in the nucleus of an atom …….

iii) The formula of ammonium ion is 'NH_3^+' ……

iv) Sunlight is essential for photosynthesis by green plants ……...

v) In decomposition reaction two substances combine to form a new compound. ……

b) Draw a neat-labelled diagram to prepare oxygen in the laboratory by heating solid lead dioxide. Indicate the various things you will be requiring including catalyst and collect the gas by downward displacement of water in a gas jar [3]

c) What conditions are required for lead oxide to give lead monoxide and oxygen gas [2]

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Question 10:

a) Select the correct word from the choice in bracket to complete each sentence [5]

i) Atomic number of an element is the number of _____ [neutrons /protons /electrons] present in the nucleus of an atom. A/An _____ [element / compound is a substance made up of one kind of atoms

ii) A _____ [Valency / Symbol] is the short form or abbreviate name of the elements

iii) The hydroxide radical or ion is written as _____[H_2O / OH^-/ Oh^{2-} / OH^{2-}] and the bicarbonate ion is _____[HCO_2^{2-} / HCO_3^{2-} HCO_3^-]

b) If benzene which is insoluble in water is mixed with water, how will you separate the mixture to get pure benzene and water separately. [1]

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c) Give names with one example each of four types of reactions. [4]

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Question 11:

a) Name the followings: [6]

i) Two coloured gas

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ii) Two poisonous gas

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iii) Two gases heavier than air

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iv) Two pungent smelling gas

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v) Two gases lighter than air

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vi) Two gases that are soluble in water

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b) Differentiate between a mixture and a compound [4]

Mixture	compound
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Question 12:

a) Draw a neat labelled diagram of a simple distillation diagram [5]

b) Match list 1 with that of list 2 and rewrite the corrected answer in the given space [5]

List 1	List 2	Corrected Answer
A poisonous gas heavier than air	Ammonia	
A basic gas lighter than air	Washing soda	
A reddish brown gas	Calcium chloride	
A deliquescent substance	Chlorine	
An efflorescent substance	Nitrogen dioxide	