

AGA KHAN UNIVERSITY EXAMINATION BOARD

SECONDARY SCHOOL CERTIFICATE

CLASS IX EXAMINATION

MAY 2012

Chemistry Paper II

Time allowed: 2 hours 25 minutes Marks 40

INSTRUCTIONS

Please read the following instructions carefully.

1. Check your name and school information. Sign that it is correct.

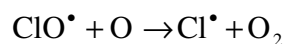
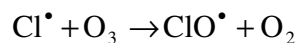
**I agree that this is my name and school.
Candidate's signature**

2. **RUBRIC.** There are EIGHT questions. Answer ALL EIGHT questions. Questions 6, 7 & 8 each offer TWO choices. Attempt any ONE choice from each.
3. When answering the questions:

Read each question carefully.
Use a black pencil for diagrams. DO NOT use coloured pencils.
DO NOT use staples, paper clips, glue, correcting fluid or ink erasers.
Complete your answer in the allocated space only. DO NOT write outside the answer box.
4. The marks for the questions are shown in brackets ().
5. You may use a simple calculator if you wish.

Q.1. (Total 4 Marks)

- a. Environmental chemists have expressed their concerns about the depletion of ozone layer. Increased quantities of chlorofluorocarbons are carried by convection of currents to the stratosphere, where they absorb ultraviolet radiations and react with ozone.



Classify Cl^\bullet and O_2 species as atom, molecule, free radical or ion. Give a reason for the identification of Cl^\bullet . (3 Marks)

Identification of Cl^\bullet : _____

Identification of O_2 : _____

Reason for the identification of Cl^\bullet : _____

- b. Cl_{17}^{35} and Cl_{17}^{37} are two isotopes of chlorine. What do you understand by the term isotopes? (1 Mark)

Q.2.

(Total 5 Marks)

a. A local scientist had discovered an imaginary element having atomic number 18. She wanted to place it in the modern periodic table for which she wanted to know the group and period number of the imaginary element. (4 Marks)

i. Identify the period and group number of the imaginary element with the help of electronic configuration.

Electronic Configuration _____

Period Number _____

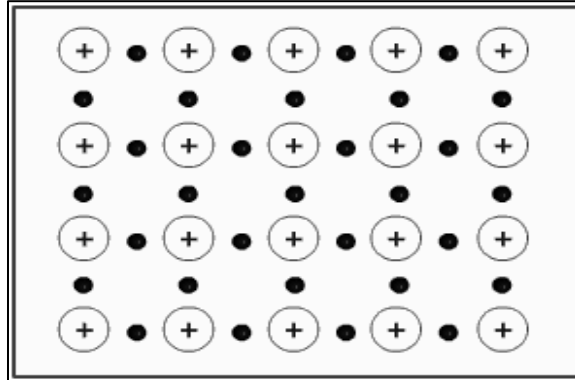
Group Number _____

ii. Write ONE characteristic of the above identified group.

b. State in which order scientists have arranged the elements in a period in the modern periodic table. (1 Mark)

Q.3. (Total 6 Marks)

a. Copper metal is used to make electrical wires to conduct electricity. A general structure of the metal is shown below.



Answer the following questions with reference to the given figure.

i. Why are copper metal wires used to conduct electricity? (1 Mark)

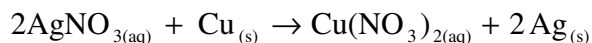
ii. Which type of force of attraction is present in the given structure? Also give ONE characteristic of it. (2 Marks)

b. Explain the relationship of boiling point and vapour pressure. Also state the effect of external pressure on boiling point. (3 Marks)

Q.4.

(Total 6 Marks)

- a. Silver plating is done on copper utensils to make it shiny. The following redox reaction occurs during silver plating.



- i. Identify the reduced species in the given reaction. (1 Mark)

- ii. Identify the change in the oxidation state of the reduced species. (1 Mark)

- iii. Identify the reducing agent in the given reaction. Give a reason for your identification. (2 Marks)

- b. A doctor prescribed milk of magnesia, a suspension of magnesium hydroxide, to a patient in order to be used as a neutralizer for stomach acidity.

How would you determine that milk of magnesia is a suspension? Give TWO reasons. (2 Marks)

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Q.5.

(Total 4 Marks)

Justify the following statement.

'The first ionization energy of group IIA is higher than group IA whereas the second ionization energy of group II A is lower than group I A.'

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