**HOLA SECONDARY SCHOOL**

**MID TERM EXAMINATIONS**

**FEBRUARY 2013**

**FORM TWO**

 **CHEMISTRY THEORY PAPER**

**TIME: 1HOUR 30 MINUTES**

NAME………………………………………………………………………………………. CLASS…………. ADM/NO………………..

## INSTRUCTIONS

1. Write your name, class and admission number in the spaces provided above
2. Answer **ALL** the questions in the spaces provided.

1. The following diagram is used to show that air contains Carbon (IV) Oxide.



 a) Name liquid “p” (1mk)

b) State the observation made on liquid “p” which will indicate the presence of carbon (IV) Oxide. (1mk)

2. Explain why phosphorous is kept under water. (2mks)

3.The diagram below shows an experiment to compare the heating effect of luminous and non luminous flame.

1. What was observed at the bottom of each beaker at the end of experiment? Explain(2mks)

 b) Which sample of water boils first? Give a reason for your answer. (2mks)

c) Besides the amount of heat produced by the two flames, state other three differences between the two flames. (3mks)

4. A piece of sodium was put into a beaker containing water.

a) State and explain three observations made in the above reaction. (3mks)

b) What would be the pH for the resulting solution (1mk)

d) Give the test for hydrogen (1mk)

e) List three uses of hydrogen (3mks)

5. Complete the following equations (2mks)

 i) Copper (ii) oxide +Magnesium

 ii) Carbon+ oxygen(limited supply)

6. What is oxidation? (1mk)

7. (a) Cars in Mombasa rust faster than cars in kisumu.Explain (1 mk)

(b) What is the chemical name for rust (1mk)

c) State the conditions necessary for rusting to occur (2mks)

d) Mention **three** ways by which rusting can be prevented(3mks)

8. Define the following terms.

1. Atom ( 1mk)

 (b) Ion (1 mk)

 (c) Element (1 mk)

 (d) atomic number (1 mk)

 (e) mass number (1 mk)

9. The following table gives the structures of five different atoms. Study it and answer the questions that follow. (A, B, C, D and E do not represent the actual symbols of elements).

|  |  |  |  |
| --- | --- | --- | --- |
| ***Atom*** | ***Protons*** | ***Electrons*** | ***Neutrons*** |
| A | 5 | 5 | 6 |
| B | 9 | 9 | 10 |
| C | 10 | 10 | 11 |
| D | 15 | 15 | 16 |
| E | 10 | 10 | 12 |

(a) What is the mass number of atom B? (1 MK)

(b) Which of the atoms represent isotopes of the same element? Give a reason. (2 mks)

(c) Give the atomic number of atom D. (1 mk)

10. An atom is said to be electrically neutral. Explain (2 mks)

11. The table below gives some information about five different atoms. Study it and answer the questions that follow. (The letters do not represent the actual symbols of the elements).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***Atom*** | ***Atomic number*** | ***Number of protons*** | ***Number of neutrons*** | ***Mass number*** | ***Electron configuration*** |
| M | 11 |  |  | 23 |  |
| N |  | 15 |  | 31 |  |
| O | 6 |  |  | 12 |  |
| P | 18 | 18 | 22 |  |  |
| Q |  |  | 7 |  | 2,4 |

Give the missing figures (7 mks)

12. Draw the electron arrangement of the following atoms:

 (a)23

 11 Na (2 mks)

(b) 27 Al

 13 (2 mks)

13. Define the following terms

(i) Anion (1 mk)

(ii) Cation (1 mk)

14. Show the ion formation of the following atoms

(a) 24 (2 mks)

 12 Mg

(b) 35 (2 mks)

 17Cl

15. Naturally occurring boron exists as two isotopes , boron-10 and boron -11 with a relative abudance of 20% and 80% respectively. Determine the relative atomic mass of boron. (3 mks)