GATITU DAY MIXED SECONDARY SCHOOL

CHEMISTRY FORM 3

END OF TERM 2 2012 TIME:1 ¾ HRS

1. What is sublimation (2mks)

b) Give 3 substances that sublime (3mks)

2. a) What are acid base indicators (1mk)

b) Give 4 commercial acid base indicators used in the laboratory (4mks)

3. a) What is rusting (1mk)

b) Give 2 conditions necessary for rusting to occur (2mks)

c) Name 3 ways of preventing rusting (3mks)

d) Give the chemical name for rust (1mk)

4. a) Define a catalyst (1mk)

b) Give the catalyst used in oxygen preparation (1mk)

5. Define (3mks)

a) atomic number

b) mass number

c) Isotope

d) Write the chemical formula for the following compounds. (3mks)

i. calcium fluoride

ii. Aluminium carbonate

iii. Calcium hydrogen sulphate

6. a) Name 3 elements in the alkaline earth metals family (3mks)

b) Both graphite and diamonds are allotropes of carbon. Graphite conducts electricity whereas diamond does not, explain (2mks)

7. Explain why it is dangerous to use charcoal burner in a room that is not well ventilated. (2mks)

8. A fixed mass of gas occupies 200cm3 at 20 0c and 600 mm Hg pressure .Calculate the temperature at a volume of 300 cm3 and 700mm Hg (3mks)

9.

Step I STEP III

CH2 =CH2

(CH2 ----------CH2)

CH3CH2Br

Step II

CH3CH3

Step IV

chccccCCCCCCCC Excess cl2

P

a) Name (3mks)

i. Step 1

ii. Step ii

iii. Step iii

b) Give the reagent and type of reaction in step I (2MKS)

c) Name the following (2mks)

i.

H -C -C –C -C -C -H

Br

ii.

C= C –C - Br

10 a) A certain mass 0f gas occupies 700 cm3 at 27 c0 and 740 mm Hg , calculate the pressure of the same gas at 100c0 if the volume remains the same (3mks)

b) 250cm3 of oxygen gas diffuse through a porous plate in 60 sec. How long would it take for the same volume of chlorine gas diffuse under the same conditions (3mks)

c) Nitrogen gas diffuse through a porous plug at a rate of 10 cm3 / min and another gas B diffuses at the rate of 5.9 cm3 /min. Calculate the molar mass of B. (3mks)

11. a) 2.5 g of zinc carbonate were reacted with 300 cm3 of 0.2m hydrochloric acid.

i. Write the balanced chemical reaction for the reaction. (1mk)

ii. Determine the moles of acid which reacted (Zn =65 c= 12 o =16) (2mks)

iii. How many moles of acid remained unreacted? (2mks)

12. a) Describe how through a chemical test you would distinguish between Nitrogen (I) oxide and Nitrogen (II) oxide (2mks)

b) Give 3 physical properties of Nitrogen (I) oxide (3mks)

13. a) State Gay-lussac’s law (2mks)

b) A hydrocarbon has 17.24% hydrogen and relative molecular mass of 58. What is its molecular formula (3mks)

14. Name the following (2mks)

a) CH3CH2C (CH3)2 CH3

b) CH3 CH2 CH2 CH2 CH3

15. Describe how you would distinguish between alkynes and alkane (3mks)