**EMBU WEST CLUSTER**

**END OF YEAR 2021**

**FORM 2 CHEMISTRY MARKING SCHEME**

1.a) -Non luminous does not produce soot

-Non luminous produce much hat 1 x 2 = 2 mks

b)i) Name – round bottomed flask 1 mk

Use- heating liquid reagents 1 mk

ii) The bottom is round for even distribution of heat 1 mk

2.a) Chemical 1 mk

b) Physical 1 mk

c) Chemical 1 mk

3.a) X – melting 1 mk

Z – Boiling 1 mk

b) Melting point decreases as impurities lower the melting point 1 x 1 = 2 mks

4.a) A√

b) D: weakly acidic due to dissolved carbon (IV) oxide. 1 mk

c) Pink 1 mk

d) Salt and water 1 mk

5.a)i) Zinc carbonate 1 mk

ii) Zinc sulphate 1 mk

iii) Carbon (IV) oxide 1 mk

b) ZuCO3(s) + H2SO4(aq)  ZnSO4(aq) + CO2(g) + H2O(l) 1 mk

6.a) Absorp carbon (IV) oxide produced by burning candle. 1 mk

b) -Candle would go off since all the oxygen in the gas jar was completely used up. 2 mks

-Level of potassium hydroxide solution would rise in the gas jar and decrease in the trough. It rose to occupy the vacuum left by the consumed oxygen.

c) x 100 = 20% 2 mks

d) -Candle may have went off due to the build up of carbon (IV) oxide.

-Not all the carbon (IV) oxide was absorbed by KOH

-Not all the oxygen was used up 1 x 2 = 2 mks

e) 3Mg(s) + N2(g) Mg3N2(s) 1 mk

7.i) Upward delivery 1 mk

ii) Conc. Sulphuric (VI) acid – drying the gas (drying Agent) 2 mks

iii) Zn(s) + 2 HCl(aq) ZnCl2(aq) + H2(g) 1 mk

8.a) Atoms of the same element with same atomic number but different mass number.

b) x Y + x 40 + x 41 = 39. 1379 3 mks

93.1Y + 40(0.01) + 41(6.89) = 3913.79

93.1Y = 3630.0

Y = 39

9.i) Alkaline earth metals 1 mk

ii) A 1 mk

iii) Covalent bond 1 mk

iv) D2O3 1 mk

v) (√) to the left of E on the diagram 1 mk

vi) PH – 3 hydrolysis in water to form acidic soln. 2 mks

vii) Atomic radius of D is larger than that of E due to increase in nuclear attractive force across the period 2 mk

10.a)i) R & T same number of electrons in outermost energy level 2 mks

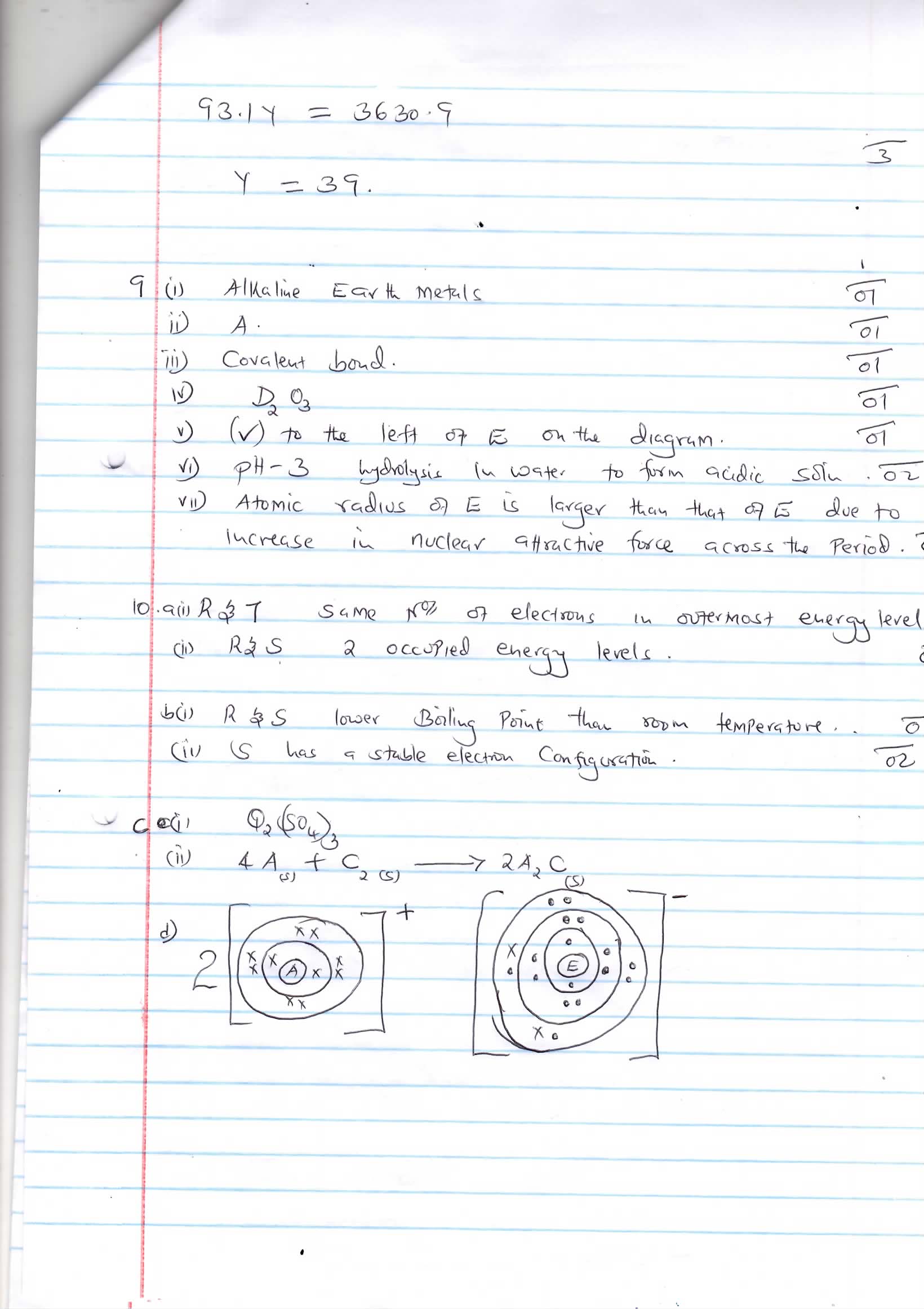
ii) R & S 2 occupied energy levels 2 mks

b)i) R & S lower boiling point than room temperature 2 mks

ii) S has a stable electron configuration 2 mks

c)i) Q2(SO4)3

ii) 4A(s) + C2(s) 2A2C(s)



11. Add lead (II) oxide in dilute nitric (V) acid in a beaker till in excess. Filter excess unreacted lead (II) oxide to collect lead (II) nitrate as filtrate.

Mix the filtrate with sodium sulphate solution prepared and filter lead (II) sulphate as residue.

Was with distilled water and dry between filter papers 3 mks

12.a) Hygroscopy 1 mk

b) deliquescence 1 mk

13.a)i) Solid T - Zinc nitrate 1 mk

Gas V - Oxygen 1 mk

ii) 2Zn(No3)2 2ZnO + 4 No2(g)  + O2(g) 1 mk

14. Add distilled water to the mixture in a beaker and stir to dissolve sodium carbonate

Filter lead (II) oxide residue, wash with distilled water and dry between filter papers 3 mks

15.a)i) Anode

ii) Pb2+(aq) 2e Pb(s)

iii) the experiment should be done in an open , or in a working fume chamber as bromine vapour is poisonous when inhared

iv) Red – brown vapour of bromine at the anode.

16.a) Ammonia

b) Filtration /fractional crystallization

heat

c) 2NaHCO3(s) Na2CO3(s) + H2O(l) + CO2(g)

d) Carbon (IV) oxide

Ammonia

Water

17.a) Black copper(II) oxide changes to brown copper metal

b) Reducing property

c) Ammonia, hydrogen

d) It is poisonous when inhared