

1. The grid given below represents part of the periodic table. Study it and answer the questions that follow.

The letters are not the actual symbols of the elements.

							A
B			G		H	E	
	J		I	L			C
D						M	
Y							

(i) What name is given to the family of elements to which A and C belong?

(1 mark)

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(ii) Write the chemical formula of the sulphate of element D.

(1 mark)

(iii) Which letter represents the most reactive

(2 marks)

(a) Metal

(b) Non-metal

(iv) Select one element that belongs to period 4.

(1mark)

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(v) Explain why the Ionic radius of element E is bigger than the atomic radius.

(2marks)

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(vi) The electron configuration of a divalent anion of element N is 2.8.8. Indicate the position of element N on the periodic table drawn above.

(1mark)

(vii) How do the atomic radii of I and C compare. Explain.

(2 marks)

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(vii) Explain the trend in the 1st ionization energies of the elements J, I and L.

(1 mark)

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2. For each of the following experiments, give the observations and the type of change that Occurs (Physical or chemical) **(3 marks)**

Experiment	Observation	Type of change
A few drops of water are added to small amount of anhydrous Copper (II) Sulphate		
A few crystals of Iodine are heated gently in a test tube		
A few crystals of copper (II) Nitrate are heated strongly in a test tube.		

3. A form one teacher cut small pieces of sodium and performed different experiments. In each of the experiments below, state the observations and write an equation of the reaction.

I. A piece of sodium metal is burnt in excess air.

Observation

(1 mark)

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Equation

(1 mark)

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II. Product in (I)above is added to water.

Observation

(1 mark)

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Equation

(1 mark)

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III. Heated sodium is lowered into a gas jar of chlorine.

Observation

(1 mark)

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Equation

(1 mark)

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IV. A small piece of sodium is put in cold water in a beaker and resulting solution is tested with litmus paper.

Observation

(1 mark)

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Equation

(1 mark)

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b) Define the term ionization energy.

(1 mark)

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