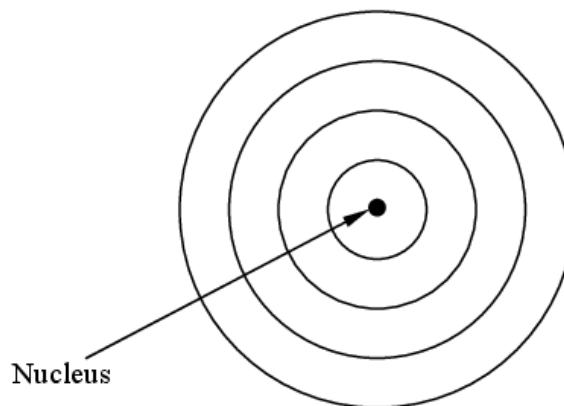


Question 1

(d) A potassium atom has atomic number 19 and a mass number of 39.

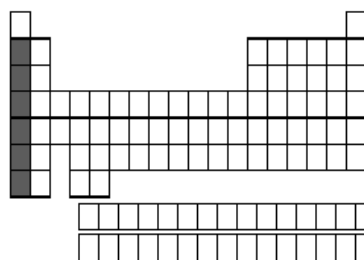
Complete the diagram using dots or crosses to clearly show the arrangement of electrons in the potassium atom.



Question 2

(a) The diagram is an outline periodic table. One area, a group of elements, is shaded.

Name this group of elements and give one chemical property that they have in common.



Group _____

Property _____

Question 3

(c) What are *isotopes*?

What? _____

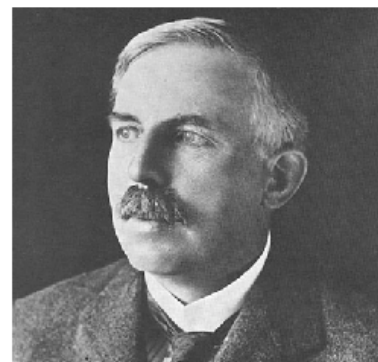
Question 4

(f) Ernest Rutherford (1871-1937) suggested the existence of the atomic nucleus in 1911.

Give two properties of the atomic nucleus.

1 _____

2 _____



Question 5

- (c) Sir Joseph John Thomson (1856-1940) announced his *discovery of the electron in 1897* following extensive experimental work. He was awarded the Nobel Prize in 1906. Compare the **charge and the mass** of an **electron** with the **charge and the mass** of a **proton**.



Charge _____

Mass _____

Question 6

- (b) The diagram shows the *first twenty elements* in their positions in the *periodic table*. The number given with each element is the *atomic number* of that element.

1	2									3	4	5	6	7	8/0	
¹ H																² He
³ Li	⁴ Be									⁵ B	⁶ C	⁷ N	⁸ O	⁹ F	¹⁰ Ne	
¹¹ Na	¹² Mg									¹³ Al	¹⁴ Si	¹⁵ P	¹⁶ S	¹⁷ Cl	¹⁸ Ar	
¹⁹ K	²⁰ Ca															

- (i) Define **atomic number**. (3)

- (ii) Naturally occurring lithium is a mixture of two isotopes. Explain the **underlined term**. (6)

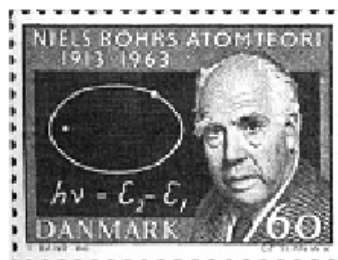
- (iii) By what **name** are group two metals known? (3)

- (iv) Why are the **noble gases**, group 8/0, **very chemically unreactive**? (6)

(1) (2)

Question 7

- (f) Niels Bohr received the Nobel Prize for physics in 1922 for his model of the electronic structure of the atom. Potassium has an atomic number of 19. Give the arrangement of the electrons in an atom of potassium.



Question 8

- (b) (i) Show, clearly using shading and labelling, the *location* of the *alkaline earth metals* on the blank periodic table given. (3)

- (ii) Name an *alkaline earth metal*. Name _____ (3)

For
examiner
use only

(1) | (2)