



Name _____ Class _____ Roll no. _____ Date _____ Marks _____ / 30

1 Key words**[4]**

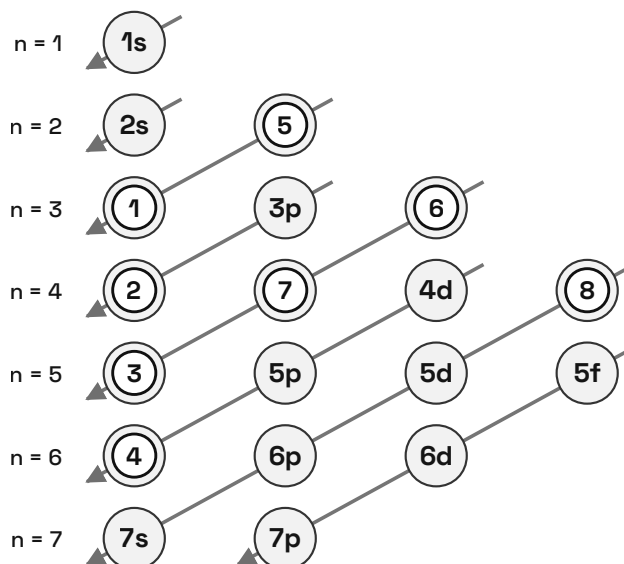
Fill in the blanks with words from the box. Two words in the box are not needed. Each blank carries 0.5 mark.

alkali metals atomic number atomic weight Aufbau principle group halogens isotopes
noble gases period transition metals

Mendeleev arranged the elements in order of their _____. In the modern periodic table they are arranged in increasing order of _____. A vertical column of the table is called a _____, and a horizontal row is called a _____. The elements of group IA are the _____, those of group VIIA are the _____, and those of group 0 are the _____. Electrons are filled into subshells in increasing order of their energy; this is the _____.

2 Label the diagram**[4]**

The diagram shows the diagonal rule for the order in which subshells are filled. Write the subshell that belongs in place of 1 to 8. Each carries 0.5 mark.



1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____



[5]

Choose the correct option for each of the following questions.

- i. What are the elements between groups IIA and IIIA in the modern periodic table called? [1]
 - a. alkali metals
 - b. transition metals
 - c. alkaline earth metals
 - d. rare earth metals
- ii. In which group of the modern periodic table are the inert gases? [1]
 - a. 0
 - b. IA
 - c. VIIB
 - d. VIIA
- iii. Which of these non-metals is the most reactive? [1]
 - a. fluorine
 - b. chlorine
 - c. bromine
 - d. iodine
- iv. In which group do the elements with the electronic configuration $1s^2, 2s^2 2p^3$ lie? [1]
 - a. IIIA
 - b. IIIB
 - c. VA
 - d. VB
- v. Which shows the correct order of increasing chemical reactivity of metals? [1]
 - a. $\text{Be} < \text{Mg} < \text{Ca}$
 - b. $\text{Na} < \text{Li} < \text{K}$
 - c. $\text{Mg} < \text{Al} < \text{Si}$
 - d. $\text{C} < \text{O} < \text{N}$

[3]

Write very short answers to the following questions.

- a. State the modern periodic law. [1]
-
-
- b. How many groups and periods are there in the modern periodic table? [1]
-
-
- c. Write the electronic configuration of potassium (atomic number 19) by subshells. [1]

[8]

Write short answers to the following questions.

- a. Give a reason: the size of atoms increases from top to bottom in a group. [2]



b. Give a reason: fluorine is more reactive than chlorine.

[2]

c. Write any two differences between a group and a period.

[2]

d. Arrange the elements Na, Mg, Al, Si, P, S and Cl (period 3) in increasing order of (i) atomic size and (ii) electronegativity.

[2]

6 Long answer

[4]

Write a long answer to the following question.

The positions of four elements A, B, C and D are shown in the outline of the periodic table below. Study it and answer the questions.

	1	2											13						18
1																			
2	A																		
3		B																	
4																			
5																	C		
6																		D	
7																			

group numbers along the top, period numbers down the side

- Write the group and the period of element B. (1)
- Write the electronic configuration of element A by subshells. (1)
- Which of the four elements can form an acidic oxide? Give a reason. (1)
- Which element hardly takes part in chemical reactions? Why? (1)



7 Think

[2]

Think, then answer.

Element 118, oganesson, completed period 7. If someone makes element 119, in which period and group will it go, and what kind of element should it be? Give a reason.

8 Activity: Across period 3 (Activity 14.7)

(not marked)

Use the modern periodic table to fill in the table for the elements of period 3. Then write what happens to the atomic size and the valency from sodium to argon.

Element (atomic number)	Configuration by subshells	Valence electrons	Valency	Metal, metalloid or non-metal
Na (11)				
Mg (12)				
Al (13)				
Si (14)				
P (15)				
S (16)				
Cl (17)				
Ar (18)				

From sodium to argon, what happens to the atomic size? And to the valency?

