

## ATOMIC STRUCTURE HW3

**1** An atom of sodium is represented by  ${}^{23}_{11}\text{Na}$ .

What is the number of electrons in this atom?

- A** 11                      **B** 12                      **C** 23                      **D** 34

**2** What particles are present in the nucleus of the oxygen nuclide  ${}^{17}_8\text{O}$ ?

	neutrons	protons
<b>A</b>	8	9
<b>B</b>	9	17
<b>C</b>	9	8
<b>D</b>	17	8

**3** An isotope of element X is represented by  ${}^{19}_9\text{X}$ .

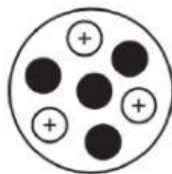
What is the electronic structure of X?

- A** 2,8,8,1                      **B** 2,7                      **C** 2,8                      **D** 2,8,18

**4** How many electrons are in the outer shell of an atom of  ${}^{11}_5\text{B}$ ?

- A** 3                      **B** 5                      **C** 6                      **D** 11

**5** The diagram represents a nucleus of element X.



key

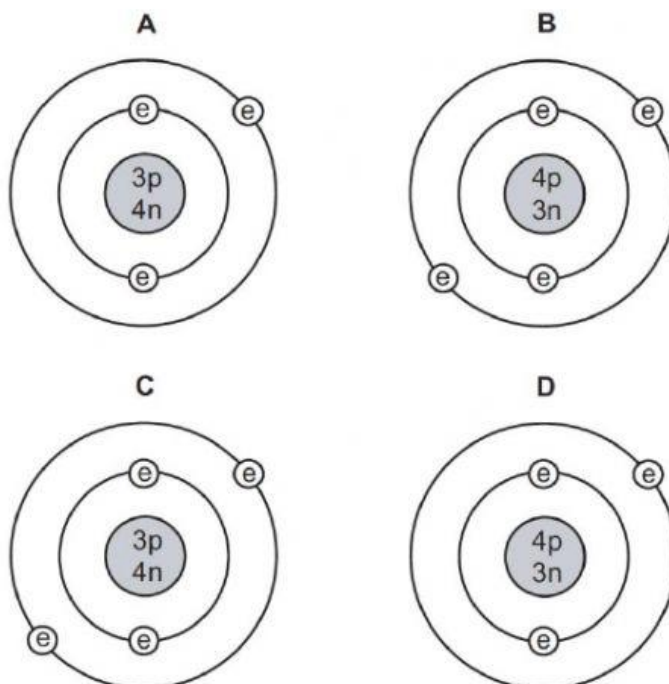
⊕ proton

● neutron

What represents the nuclide of this element?

- A**  ${}^3_4\text{X}$                       **B**  ${}^4_3\text{X}$                       **C**  ${}^7_3\text{X}$                       **D**  ${}^7_4\text{X}$

**6** Which diagram shows the structure of a  ${}^7_3\text{Li}$  atom?



key

p = proton

n = neutron

e = electron

7 The table shows the electronic structures of five elements, V, W, X, Y and Z.

The letters are not their chemical symbols.

element	electronic structure
V	2.2
W	2.7
X	2.8.2
Z	2.8.8

Which elements are in the same group?

- A V and W    B V and X    C W and Z    D X and Z

8 What is used to decide the order of the elements in the Periodic Table?

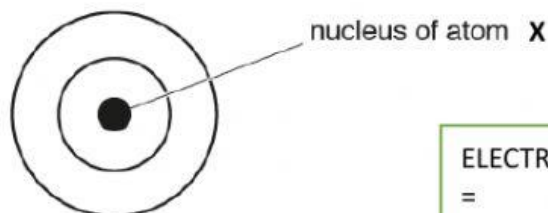
- A density  
B number of neutrons  
C number of protons  
D relative atomic mass

9 Some information about three different atoms X, Y and Z is shown in Table 9.1.

Table 9.1

atom	number of protons	number of neutrons	number of electrons
X	8	8	8
Y	8	9	8
Z	8	10	8

(b) WRITE the electronic configuration of atom X in the box given below.



ELECTRONIC CONFIGURATION OF X  
=

Fig. 9.1

[1]

(c) Use the Periodic Table to identify the element of atom X

[1]

