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FORMATIVE TEST 1

A. Multiple-choice Questions

1. Figure 123 shows the particles of a substance in three states, R, S and T.



Figure 1.23

Which of the following statements is true?
A. The change of the substance from state R to S is called condensation.
B. The change of the substance from state T to R is called melting.
C. The particles do not move in state R.
D. The substance has a fixed volume in state S.

2. Hydraulic brakes in cars are filled with liquids and not gases. This is because gases are easily compressed but liquids cannot be compressed. Which statement supports this explanation?
A. The forces of attraction between the gas particles are stronger than that between the liquid particles.
B. The gas particles are smaller than the liquid particles.
C. The gas particles are spaced further apart than the liquid particles.
D. The gas particles have less energy than the liquid particles.

3. Condensation occurs when …
A. a liquid turns into a solid.
B. a liquid turns into a vapour
C. a solid turns into a solid
D. a vapour turns into a liquid

4. When bubbles of gas form in a liquid, which physical change is taking place?
A. Boiling
B. Evaporating
C. Condensing
D. Melting

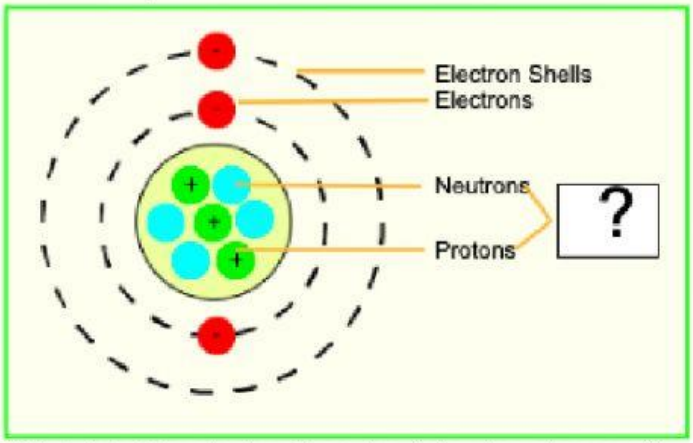
5. Jason, Siti and Megan were discussing the kinetic particle theory. Jason said that in a solid, the particles are close together. Megan said that the particles of a substance in different states move at a constant speed. Siti said that the higher the temperature, the faster the particles move.

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Who are correct?

A. Jason and Megan only.
B. Jason and Siti only.
C. Megon and Siti only.
D. Jason, Megan and Siti.

6. Look at the picture.



Which label is missing from the following diagram?

A. Neutroneus
B. Proton
C. Necleus
D. Electron

7. The number of protons in an atom always is the same as the number of …

A. Electron
B. Neutron
C. Nuclei
D. Atomic number

8. The maximum mass of an atom is concentrated in which of these?

A. Nucleus
B. Neutrons
C. Protons
D. Electrons

9. Which of the following statements about the electron is incorrect?

A. It is a negatively charged particle
B. The mass of electron is equal to the mass of neutron
C. It is a basic constituent of all atoms
D. It is a constituent of cathode rays

10. An atom has a mass number of 37 and atomic number 17. How many neutrons does it have?

A. 20
B. 54
C. 17
D. 21

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B. Fill the questions with the correct answers.

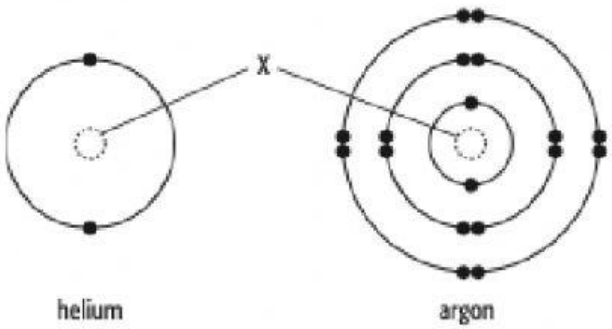
1. Vanadium has two isotopes.

$^{50}_{23}V$ $^{51}_{23}V$

An atom contains protons, electrons and neutrons.
Complete the table to show the number of protons, electrons and neutrons in these two isotopes of vanadium.

Isotope	Number of protons	Number of electrons	Number of neutrons
$^{50}_{23}V$	23	23	
$^{51}_{23}V$			28

2. Helium and argon are noble gases. The atomic structures of helium and argon are shown below.



These are 2 statements are correct. Give a tick for the correct statement.

Argon has an complete inner shell of electrons.

Helium has a complete outer shell of electrons.

Helium has an incomplete outer shell of electrons.

An atom of argon has 16 electrons.

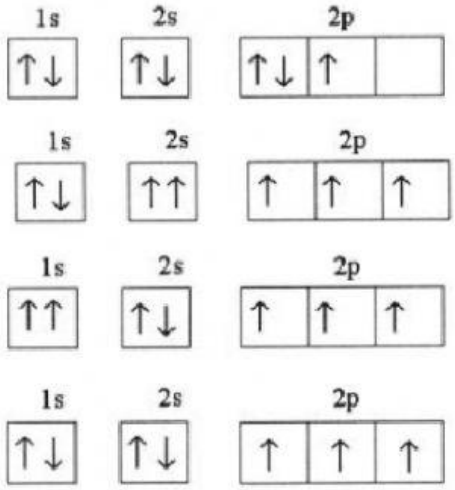
3. Complete these sentences.

(i) ..... of an element are the atoms of same element having same atomic number but different mass number.

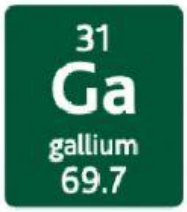
(ii) The atoms $_{18}Ar^{40}$ and $_{19}K^{40}$ are pairs of .....

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4. Tick the correct electron configuration for nitrogen with 7 electrons.



5. Tick the correct electron configuration from these atom.



$1s^2\,2s^2\,3s^2\,3p^6\,3d^{10}\,4s^2\,4p^1$

$1s^2\,2s^2\,2p^6\,3s^2\,3p^6\,4s^2\,4d^{10}\,4p^1$

$1s^2\,2s^2\,2p^6\,3s^2\,3p^6\,4s^2\,3d^{10}\,4p^1$

$1s^2\,2s^2\,2p^6\,3s^2\,3p^6\,4s^2\,3d^{10}\,4d^1$

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