

ELECTRICITY AND INVENTIONS



1. Complete the following diagram.

-

electrons

have a charge of ____

+

protons

have a charge of ____

○

neutrons

have a charge of ____

the

nucleus

is made up of ____

and neutrons

Atoms have the same

number of protons

and electrons

Keywords

☐ proton

☐ neutron

☐ electron

☐ nucleus

Example

This lithium atom

has:

— electrons

— protons

— neutrons

LIVEWORKSHEETS

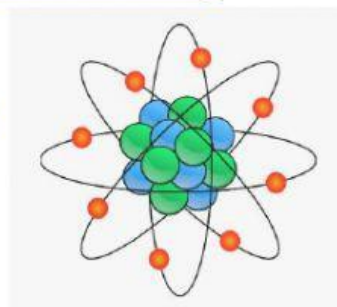
2. Fill in the gaps. Pay attention to the word bank.

Atoms
electrons

neutrons
nucleus

protons
~~element~~

Matter is anything that has mass and takes up space. The primary constituent of matter is called an 1) e l e m e n t and is made up of 2) _____. Each atom is made of smaller particles, known as subatomic particles. In the 3) _____, or middle, of an atom are two types of subatomic particles: protons and 4) _____.



The positively charged particles in the nucleus of an atom are called 5) _____ while the uncharged particles in the nucleus are called neutrons. Orbiting the nucleus of an atom is a cloud of negatively charged 6) _____. These negatively charged particles are much smaller in mass than protons and neutrons, so much so that they do not contribute a significant amount to the mass of an atom.

Therefore, to calculate the atomic mass of an atom, you find the sum of the protons and neutrons found in the atom.

3. Choose the right answer: electrically neutral / positively charged/ negatively charged

1.



2.



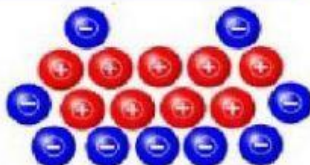
3.



4.



5.



6.



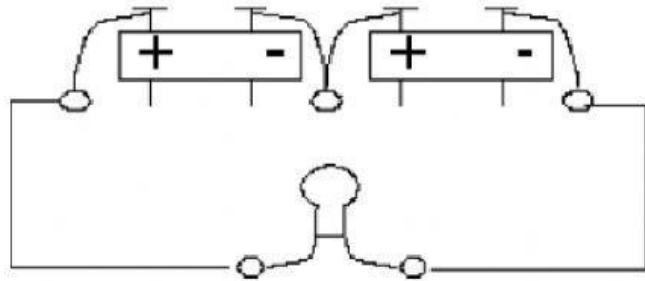
4. Look at the following picture and answer the questions.

a) What type of circuit is it?

SIMPLE CIRCUIT

SERIES CIRCUIT

PARALELL CIRCUIT



b) Does the lamp light with two batteries?

YES

NO

c) Now, we will add two more bulbs to the same circuit. Unscrew one bulb from its socket. What happens?

NOTHING

ALL LIGHT BULBS GO OUT.

ONLY THE NEXT ONE GOES OUT.

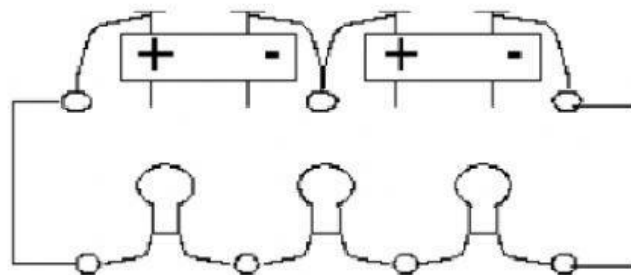


Figure B

d) Why wouldn't it be a good idea to wire your house in a simple or series circuit?

WE WASTE TOO MUCH ENERGY.

IT WOULD BE A GOOD IDEA TO SAVE ENERGY. EVERYTHING IS CONNECTED.

IF ONE LIGHT WENT OUT, THEN EVERYTHING THAT REQUIRES ELECTRICITY, WOULD GO OUT TOO.