

CLASS : IX (CBSE)

WORKSHEET-1

SUBJECT : CHEMISTRY

NAME OF THE STUDENT:

SEC:

ROLL NO.

DATE:

4. STRUCTURE OF ATOM

Fill in the blanks:

- According to Maharishi Kanad, the tiniest to tiny particle of a pure substance is called _____.
- An atom is the smallest unit of an element which takes part in a _____.
- Mass of an electron is $1/1837$ times less than the mass of one atom of _____.
- The K-shell of any atom cannot have more than _____ electrons.
- Isotopes are the atoms of _____ element, having same atomic number but different mass number.
- An atom of an element has 11 protons 11 electrons and 12 neutrons. The atomic mass of the atom is _____.
- Almost all the mass of an atom is concentrated in a small region of space called the _____.
- The subatomic particle not present in a hydrogen atom is _____.
- Cathode ray are a beam of fast moving _____ .
- _____ and _____ more or less complexly make up the mass of an atom.
- The number of neutrons in the neutrons in the neutrons of an atom can be calculated by _____ the atomic number of _____ its mass number.
- The isotopes of an element do not differ in the number of _____ but do differ in the number of _____.
- The type of radiations, which are not deflected in presence of electric or magnetic field are termed as rays.
- The penetrating power of B-rays is _____ times more than a-rays.
- Synthetic elements are those which are prepared by _____.
- The control rods in a nuclear reactor are made up of _____.
- _____ are stored in deep mines which are not in use.
- When an elements emits B-particle, its mass number _____.
- Y-rays are _____ radiations.
- The difference between the actual isotopic mass and the sum of masses of protons, neutrons and electrons is called _____.
- _____ are the best dombarding particles.
- _____ is used for the treatment of leukaemia.

True / False:

1. Radioactive isotope of iodine is used for making the medicine called tincture iodine.
2. Thomson proposed that the nucleus of an atom contains protons and neutrons.
3. J.J. Thomson proposed that the nucleus of an atom contains only nucleons.
4. An electron has a mass that is much less than a proton.
5. There is no particle of matter smaller than an atom.
6. Atoms of an element may have more or less neutrons or electrons than other atoms of the same element.
7. The innermost atomic shell can hold a maximum of 18 electrons.
8. β - Particles are fast moving electrons carrying negative charge.
9. Nuclear chemistry has nothing to do with the electrons present in an atom.
10. β - particles are nothing but electrons.
11. α -particles are same thing as helium atoms.
12. Out of α , β and γ - rays travel with the highest speed and have highest ionizing power.
13. A loss of β -particle results in the production of isobars.
14. There is no difference between 'artificial radioactivity' and 'induced radioactivity'.
15. Iodine- 131 is used in the treatment of thyroid disorders.
16. In a given electric field, β -particles are deflected more than α - particles in spite of α - particles having larger charge.

III. One Mark Questions.

1. In television picture tube which type of rays are used?
2. Which is heavier, neutron or proton?
3. If electrons move from K to L shell, will the energy be absorbed or evolved?
4. Helium atom has an atomic mass of 4u and two protons in its nucleus. How many neutrons does it have?

III. Two Mark Questions.

5. An ion X^{2+} contains 18 electrons and 20 neutrons. Calculate the atomic number and mass no. of element X. Name the element X.
6. In a given electric field, β - particles are deflected more than α - particles in spite of the fact that α - particles have larger charge, why?
7. Give one achievement and one limitation of J.J Thomson's model of atom?

IV. Three Mark Questions.

8. What are valence electrons? What is their significance?
9. What would be the observation if the α - particle scattering experiment is carried out using a foil of a metal other than gold?
10. Electronic configuration of Potassium is 2,8,8,1 and Calcium 2,8,8,2, when M shell can have maximum of 18 electrons then why next element Scandium has electronic configuration 2,8,9,2 and not 2,8,8,3 ?
11. What are isotopes and Isobars? What are two isotopes of chlorine? Calculate the average atomic mass of a chlorine atom?

V. Five Mark Questions.

12. What is present concept of an atom? Explain in detail? Why this model is considered to be the most appropriate model?
13. Explain the Rutherford's alpha particle scattering experiment. What were the main conclusions drawn from this experiment?