

STRUCTURE OF THE ATOM

1. The charge/ mass ratio of electron:

- Depends on the nature of the electrodes
- Depends upon nature of the gas
- Remains constant
- Depends on both nature of the gas and nature of the electrode

2. A student weighs 30kg. Suppose his body is entirely made of electrons. How many electrons are there in his body? Mass of an electron = $9.1 \times 10^{-31} \text{ kg}$

- 3.29×10^{31}
- 3.29×10^{30}
- 3.29×10^{23}
- 3.29×10^{32}

3. Which of the following is correct?

- | | |
|--------------|----------------------|
| Column 1 | Column 2 |
| A. Electrons | i. Positive charge |
| B. Protons | ii. No charge |
| C. Neutrons | iii. Negative charge |
- A-iii, B-ii, C-i
 - A-iii, B-i, C-ii
 - A-ii, B-iii, C-i
 - A-ii, B-i, C-iii

4. If K, L, M, N shells of an atom are full, the total number of electrons in the atom are:

- 60
- 26
- 42
- 36

5. Which of the following are positively charged ions:

Atoms	Protons	Electrons	Neutrons
A	17	17	18
B	12	10	12
C	16	17	20
D	1	0	0
E	18	18	22
F	10	10	10

- A and B
- C and D
- B and D
- D and F

6. The electronic configuration of Cl(17) is:

- 2,8,7
- 2,2,8,5
- 2,8,2,5
- 2,2,5,8

7. Composition of the nuclei of two atomic species are given:

	X	Y
P	7	8
N	9	8

The mass number of x and Y and their relation is

- 16,16; isotopes
- 17,15; isotopes
- 17,15; isotopes
- 16,16; isobars

8. Na^+ has 12 neutrons and 10 electrons. Which of the following statements is correct?

- Na^+ has atomic number 10 and mass number 22.
- Na^+ has atomic number 11 and mass number 23.
- Na^+ has atomic number 10 and mass number 23.
- Na^+ has atomic number 11 and mass number 22.

9. Which of the following statement is correct about proton?

- It is the nucleus of deuterium
- It is an ionized hydrogen molecule
- It is an ionized Hydrogen atom
- It is an α particle with unit positive charge

10. The highest value of e/m ratio for anode rays is observed when the discharge tube is filled with:

- N_2
- H_2
- He
- Ar

11. When a gold foil is bombarded by a beam of α particle, only a few of them get deflected whereas most go straight undeflected. This is because

- The force of attraction exerted on α particles by the electrons is insufficient
- The volume of nucleus is much smaller than that of the atom
- The force of repulsion acting on the fast moving α particles is very small
- The neutrons have no effect on α particles

12. Which of the following statements does not belong to Bohr's model?

- Energy of the electrons in the orbit is quantized
- The electrons in the orbit nearest to the nucleus is the lowest energy
- Electrons revolve around the nucleus in different orbits having fixed energies
- The electrons radiate energy during revolution due to force of attraction between nucleus and electrons

13. How many electrons, protons and neutrons are present in X^+ , if atomic number of X is 19 and its mass number is 39

- E=19, P=19, N= 20
- E=18, P=19, N= 20
- E=18, P=19, N= 19
- E=19, P=20, N= 20

14. Which of the following does not have 8 valence electrons:

- He
- Ne
- Ar
- Cl^+

15. Which of the following does not have one electron in its valance shell

- Na
- Li
- H
- Ca