

## IX SCIENCE TEST ON STRUCTURE OF THE ATOM

TIME : 1 HR.

M.M. : 30

1. Name the scientist who discovered electron. 1
2. State the location of electrons, protons and neutrons in an atom. 1
3. What is the maximum number of electrons which can be accommodated in the K shell of an atom? 1
4. What are valence electrons? 1
5. Name the radioactive isotope which is used in the treatment of cancer. 1
6. An element Z contains two naturally occurring isotopes  ${}_{17}^{35}Z$  and  ${}_{17}^{37}Z$ . If the average atomic mass of this element be 35.5 u, calculate the percentage of two isotopes. 2
7. The mass number of an element is 23 and it contains 11 electrons. What is the number of protons and neutrons in it? What is the atomic number of the element? 2
- 8.a. Which of the nuclear particles is present in the same fixed number in the atoms of any particular element?  
b. What do we call this number which is characteristic of a particular element? 3
9. Describe Thomson's model of the atom. 3
10. What are isotopes? Explain by giving an example. 3
11. Compare an electron, a proton and a neutron in respect of their relative masses and charges. 3
12. The nucleus of an atom has 5 protons and 6 neutrons. What would be the (a) atomic number, (b) mass number, (c) the number of electrons, and (d) the number of valence electrons, per atom of this element? 4
13. Describe the Rutherford's  $\alpha$ -ray scattering experiment with help of a diagram and describe the observations and conclusions drawn from them. Give one drawback of Rutherford model of an atom. 5