ESSENCE TEST-5
CHEMISTRY

DATE : 11-08-2019	CLASS 11th PCMB	MARKS –40	TIME : 1 hrs

1. Name the sub-atomic particles of an atom. **[1]**

2. What is the charge (e) of an electron? **[1]**

3. Which orbital is non-directional? **[1]**

4. What is the mass of proton? **[1]**

5. What is the charge of a proton? **[1]**

6. Give the main properties of canal ray experiment. **[2]**

7. Give the main features of Thomson's model for an atom. **[2]**

8. Give the mathematical expression of uncertainty principle. **[2]**

9. Find out atomic number, mass number, number of electron and neutron in an element $^{40}_{20}X$? **[2]**

10. Which quantum number determines
    (i) energy of electron
    (ii) orientation of orbitals

11. What did Rutherford conclude from the obervations of α-ray scattering experiment? **[3]**

12. What is the relation between kinetic energy and frequency of the photoelectrons? **[3]**

13. What transition in the hydrogen spectrum would have the same wavelength as the balmer transition, n = 4 to n = 2 of He^+ spectrum? **[3]**

14. Calculate the uncertainty in the momentum of an electron if it is confined to a linear region of length 1×10^{-10}. **[3]**

15. Write the electronic configuration of **[4]**
    (a) Mn^{4+} (b) Fe^{3+} (c) Cr^{2+} (c) Zn^{2+}
    Mention the number of upaired electrons in each case.

16. (a) What is the mass of an electron?
    (b) Which experiment led to the discovery of electrons and how? **[4]**

17. What designations are given to the orbitals having? **[5]**
    (i) n = 2, l = 1   (ii) n = 2, l = 0   (iii) n = 4, l = 3   (iv) n = 4, l = 2
    (v) n = 4, l = 1?