SECTION – B (SHORT ANSWER)

Note: Answer any SEVEN of the following questions. Each question carries 05 marks.

Q.2 Prove that co – efficient of linear expansion is one third to co – efficient of volume expansion.

Q.3 Calculate electric intensity due to a sheet of infinite charges distributed uniformly.

Q.4 Can you construct two wires of same length, one of copper other of iron that would have the same resistance at same temperature? Explain.

Q.5 Why work done by a charge due to magnetic force is zero?

Q.6 How a single device is used to measure the resistance , current and potential?

Q.7 Why are the energy levels of hydrogen atom less than zero?

Q.8 How the photon is differe from the matter?

Q.9 The battery of a pocket calculator supplies 0.25 A at a p.d of 8V. What is the power rating of the calculator?

Q.10 Calculate the energy of x – ray photon having wavelength 2×10^{-10}m.

Q.11 What is the wavelength of the radiation that is emitted when a hydrogen atom undergoes a transition from the state n = 3 to n = 1.

SECTION – C (DESCRIPTIVE ANSWER)

Note: Answer any TWO of the following questions. Each question carries 09 (5 + 4) marks.

Q.12 (a)What is specific heat and molar specific heat? Show that $C_p - C_v = R$.

(b) Describe Bohr's atomic Model. Hence calculate the energy in n^{th} orbit.

Q.13 (a) What is charge to mass ratio of an electron? How it calculated by different two methods?

(b) What are the assumptions of theory of relativity? And write the results of special theory of relativity.

Q.14 Write the notes on any TWO of the following.

(i) Wheat Sstone Bbridge

(ii) Power Ddissipation in Rresistor

(iii) Nuclear Fission and Fusion

(iv) A.C Generator