1) The density of a substance at 0°C is 10 g/cc and at 100°C its density is 9.7 g/cc. The coefficient of linear expansion of the substance is

   (a) $10^{-4}\,°C^{-1}$ (b) $10^{-2}\,°C^{-1}$ (c) $10^{-3}\,°C^{-1}$ (d) $10^{-5}\,°C^{-1}$

2) A copper wire of length L increases in length by 0.3% on heating from 20°C to 40°C. Then percentage change in area of a copper plate of dimensions 3L x 2L on heating from 20°C to 40°C is

   (a) 0.15%   (b) 0.3%   (c) 0.4%   (d) 0.6%

3) The ratio of densities of iron at 10°C and 30°C is (α of iron = 10 x 10^{-6} $°C^{-1}$)

   (a) 1.003   (b) 1.0003   (c) 1.006   (d) 1.0006

4) A metal cube of length 10 mm at 0 ºC (273 K) is heated to 200 ºC (473 K). Given: its coefficient of linear expansion is 2 x 10^{-5} K^{-1}. The percent change of its volume is

   (a) 0.1   (b) 0.2   (c) 0.4   (d) 1.2

5) Certain amount of heat is given to 100g of copper to increase its temperature by 21°C. If the same amount of heat is given to 50 g of water, then the rise in its temperature is
(specific heat capacity of copper = 400 J kg^{-1} K^{-1} and that for water = 4200 J kg^{-1} K^{-1})

   (a) 4 ºC   (b) 5.25 ºC   (c) 8 ºC   (d) 10.5 ºC

6) Specific heat of a substance at the melting point becomes

   (a) low   (b) high   (c) remains unchanged (d) infinite

7) Person weighing 60 kg takes in 2000 kcal diet in a day. If this energy was to be used in heating the person without any losses, his rise in temperature would be nearly (Given sp. heat of human body is 0.83 cal g^{-1} $°C^{-1}$)

   (a) 30°C   (b) 40°C   (c) 35°C   (d) 45°C

8) Can water be boiled without heating?

9) Why water is preferred to any other liquid in the hot water bottles?

10) The ice at 0°C is converted into steam at 100°C. State the isothermal changes in the process.

11) What is relegation?

12) What is sublimation?