J.E.E./A.I.P.M.T. Foundation - XI Physics Worksheet

Time: 30 min   Chapter#11: Thermal Properties of Matter-01   Full Marks: 20

Instructions:
1. All questions are compulsory.
2. Please give the explanation for the answer where applicable.

Q1 - What is heat?

(1 Mark)

Q2 - Define specific heat.

(1 Mark)

Q3 - What is meant by triple point?

(1 Mark)

Q4 - A piece of metal has a length 30 cm at 150C. At 90^0C its length increases by 0.027 cm. Find the coefficient of cubical expansion of the metal?

(2 Marks)

Q5 - Explain why water does not freeze at the bottom of the lakes in winter.

(2 Marks)

Q6 -It is required to prepare a steel meter scale, such that the millimeter intervals are to be accurate within 0.0005mm at a certain temperature. Determine the maximum temperature variation allowable during the rulings of millimeter marks.
Given α for steel = 1.322 x 10^{-5} $^0C^{-1}$

(2 Marks)

Q7 - A person weighing 60 kg takes in 2000 kcal diet in a day. If this energy were to be used in heating the person without any losses, what would be his rise in temperature? Given specific heat of human body is 0.83 cal g^{-1} $^0C^{-1}$

(3 Marks)

Q8 - If I is the moment of inertia of a solid body, find the change in I corresponding to a small change in temperature?

(3 Marks)

Q9 - Two vessels of volumes 5 and 3 litres contain air at pressure of 3 and 7 atmospheres, respectively. What will be the resultant pressure when they are connected through a small-bore tube? Assume temperature remains constant throughout.

(5 Marks)