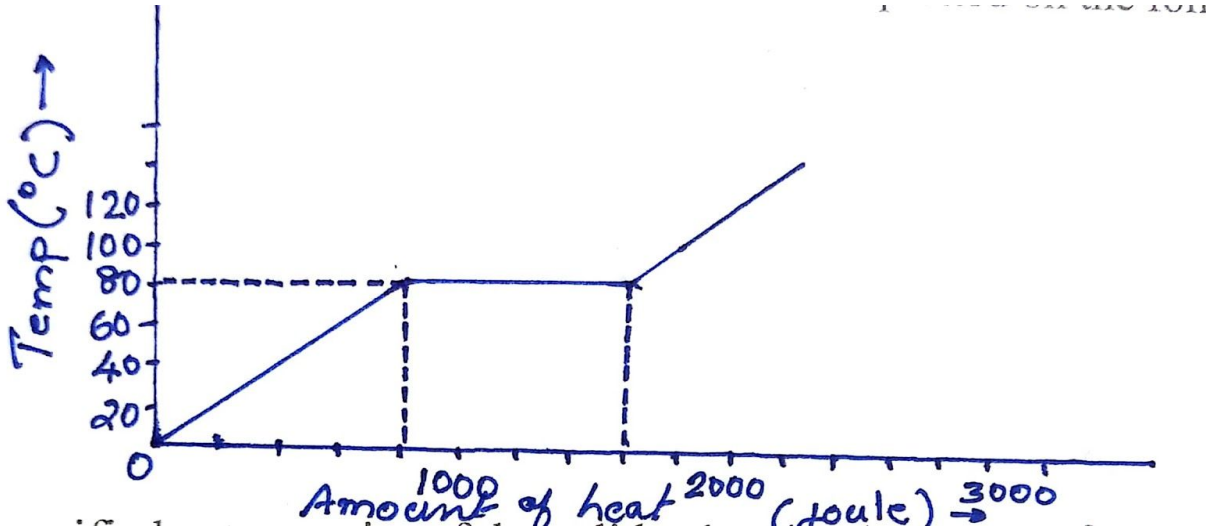
Physics Grade 10 Calorimetry Test

Time: 50 Minutes, Maximum Marks: 20

Q1. What is heat by specific heat capacity of a substance?[1]

Q2. Why does the heat supplied to a substance during its change of state not cause any rise in its temperature? [1]

Q3. A substance is in the form of a solid at 0ºC. The amount of heat added to this substance and the temperature of the substance are plotted on the following graph:



If the specific heat capacity of the solid substance is 500 J/KgºC, find from the graph:

(a) The mass of the substance
(b) The specific latent heat of fusion of the substance in the liquid state [4]

Q4. A piece of iron of mass 2.0 kg has a thermal capacity of 966 J/ºC

(a) How much heat is needed to warm it by 15ºC?
(b) What is its specific heat capacity in SI units? [4]

Q5. Define the specific latent heat of vaporization of a substance.[1]

Q6. What is the principle of calorimetry? [2]

Q7. Explain why water is used in hot water bottles for fomentation and also a universal coolant. [3]

Q8. I kg of ice at 0ºC is being continuously heated through an electric heater rated at 1kW. Assuming that all the heat energy is transmitted to ice calculate the time interval in seconds for:

(a) Ice to melt completely at 0ºC

(b) Water to get heated from 0ºC to 100ºC (L=336kJ/kg, C=4200J/kgºC) [4]