



# TEST PAPER: PHYSICS

Time: 45 Minutes

Class: I.C.S.E. 10

Max. Marks: 30 Marks

Date: 5<sup>th</sup> September 2018

**Marking Scheme:** All questions carry 10 marks each. Subparts (A) and (B) carry 3 marks each and subpart (C) carries 4 marks.

## Question 1:

- Define heat capacity and specific heat capacity and state their units. What is the relation between the two?
- State 3 applications based on the fact that water has a very high specific heat capacity.
- Give 4 differences between heat and temperature.

## Question 2.

- A bucket contains 8 kg water at 25°C. 2 kg water at 80°C is poured into it. Neglecting heat absorbed by the bucket, calculate final temperature of the water
- An electric heater of power 600 W raises the temperature of 4 kg of a liquid from 10°C to 15°C in 100 seconds. Calculate
  - Heat capacity of 4 kg of liquid
  - Specific heat capacity of the liquid
- Answer the following:
  - Define the 'Melting' and Latent heat of vaporization.
  - What is the effect of Pressure on melting point of a solid?

## Question 3.

- 10 g of ice is initially at -20°C. Calculate its final temperature when 1200 cal of heat is given to it. (Given: specific heat capacity of ice is 0.5 cal/g °C and that of water is 1 cal/g °C. Latent heat of fusion of ice is 80 cal/g and latent heat of vaporization of water is 540 cal/g.
- Explain below phenomenon
  - Drinks get cooled more quickly by adding pieces of ice at 0 °C than by adding water at 0°C to it
  - Snow on mountain does not melt all at once even though the surrounding temperature is much less than 0 °C
- A vessel of negligible heat capacity contains 5 kg water at 50 °C. If 5 kg ice at 0 °C is added to it, find
  - Heat energy imparted by water in fall of its temperature from 50 °C to 0 °C
  - Final temperature of the mixture
  - Mass of ice melted
  - Mass of water finally remaining in the mixture