Heat

1. Define heat and specific heat capacity.
2. What is one calorie heat?
3. What is an anomalous expansion of water?
4. What is the relation of heat with its factors?
5. Describe the structure of a digital thermometer with a diagram.
6. Explain the structure of a clinical thermometer.
7. Explain the advantage of the more specific heat capacity of water in short.
8. What are the similarities and dissimilarities between heat and temperature?
9. Why is Mercury heated faster than water?
10. Why is the thermometer bulb made of a thin wall but the stem is thick-walled?
11. When a beaker filled with water at 4^oC is cooled or heated, the water overflows from the beaker why?
12. If the specific heat capacity is 380 $JKg^{-1}{}^0C^{-1}$, what is the thermal capacity of 5 kg of copper?
13. A pressure cooker of mass 2 Kg at a temperature of 25^oC requires 2.1 × 10^5J heat energy to increase its temperature to 50^oC.

14. The temperature of 600g of a certain metal is 100^{o}c. It is then placed in 300g of water at 15^{o}C. If the final temperature is 20^{o}C, calculate the specific heat capacity of the metal.

15. The temperature of the water is 50C in the winter season. If 20 liter of water has to be heated to 35^{o} C for taking a bath, calculate the amount of heat required for it.(specific heat capacity of water if 4200J $Kg^{-10}C^{-1}$, mass of 1 litre of water = 1Kg)