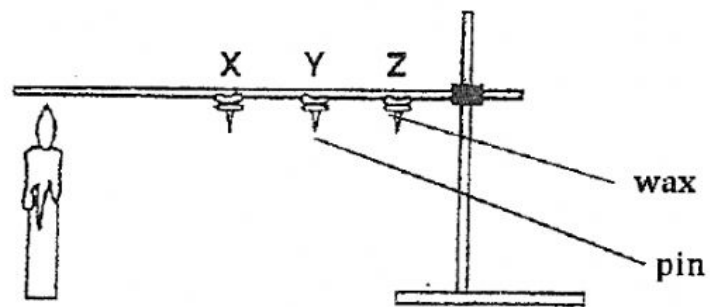


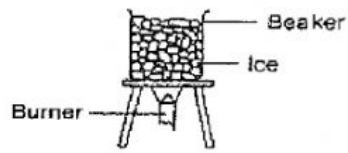
23. (a) The diagram in **Figure 9** below shows a metal bar with 3 pins that have been attached to it at **X**, **Y** and **Z** by **wax**.



**Figure 9**

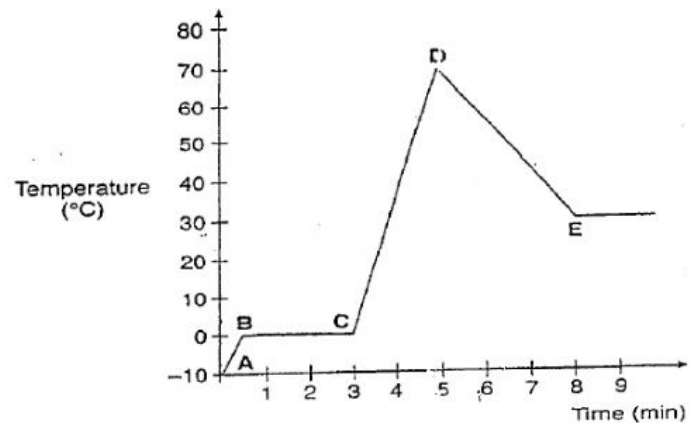
- i. Which pin falls first?  
\_\_\_\_\_ [1]
- ii. Which pin falls last?  
\_\_\_\_\_ [1]
- iii. Where does the heat come from?  
\_\_\_\_\_ [1]
- iv. In the metal bar, does the heat flow from **Z** to **X** or from **X** to **Z**?  
\_\_\_\_\_ [1]
- v. List two conductors of heat.
  1. \_\_\_\_\_
  2. \_\_\_\_\_ [2]

- (b) Alex took some ice cubes from freezer compartment of a refrigerator. He heated the ice as shown in **Figure 10**. After a while he stopped heating.



**Figure 10**

Then he gathered the information and plotted a graph in **Figure 11** below.



**Figure 11**

Study the graph in Figure 11 and then answer the following question.

- i. What was the temperature of the freezer compartment?  
 \_\_\_\_\_ [1]
- ii. Which part of the graph, AB, BC, CD or DE shows:
  - (a) The melting ice? \_\_\_\_\_ [1]
  - (b) The cooling of hot water at room temperature?  
 \_\_\_\_\_ [1]
- iii. What was the maximum temperature reached by the water during the experiment?  
 \_\_\_\_\_ [1]