

Each question is worth 10

There are 6 problems in total and one conceptual question.

Problems assigned from Concepts in Thermal Physics by Blundell and Blundell

1.4, 2.5, 3.3, 3.6 3.7

(6) When the bulb of a mercury thermometer is immersed in water at its triple point, the length of the mercury column is 5cm.

(a) What is the temperature when the length of the column is 6.0 cm?

(b) What is the length of the column when the thermometer is immersed in 100 °C liquid.

(c) If the length precision of the thermometer is 0.01cm, can this thermometer be used to distinguish between the triple point of water (0.01 °C) and the ice point (0.00 °C).

Conceptual question:

Explain the concept of absolute zero (1-2 paragraph)

For interest you could read the new article

<http://www.nature.com/news/quantum-gas-goes-below-absolute-zero-1.12146>