OCR
Oxford Cambridge and RSA

A level Physics B

H557/01 Fundamentals of physics

Question Set 7

1. (a) (i) An electric shower runs at 230 V and 46A.
In summer it increases the water temperature from 22 °C to 39 °C.

Calculate the thermal energy used to increase the temperature of 1 kg of the water.

Specific thermal capacity of water = 4200 Jkg^{-1} K^{-1}

energy =……..kJ **[2]**

(ii) Calculate the time it will take the heater to deliver this amount of thermal energy.

time =……...s

[2]

(b) In winter the inlet water temperature drops to 5 °C, but the final temperature remains at 39 °C.

State and explain the change to the water flow rate for this shower in winter compared tosummer.

[2]

Total Marks for Question Set: 6