Question number	Answer	Notes	Marks
6 (a)	any five from: MP1. measure temperature increase; MP2. measure time taken; MP3. allow temperature to rise to maximum after heater switched off; MP4. calculate total energy / use of E = P×t; MP5. measure <u>mass</u> of water; MP6. (by) finding difference between empty beaker and 'beaker + water' MP7. use of E = m × c × Δθ; MP8. plot a temperature-time graph; MP9. use gradient (so c = P/(m × gradient));	accept measure initial and final temperature allow a stated time period	5
(b) (i)	temperature difference calculated; substitution; evaluation; e.g. (ΔT = 65 – 16 =) 49 (°C) ΔQ = 75 × 4200 × 49 (ΔQ =) 15 000 000 (J)	allow 49, 65-16 seen allow ecf from clear incorrect temperature **difference** allow 15 MJ allow correct answers to other significant figure values i.e. 15 435 000 (J)	3
(ii)	any three from: MP1. idea that energy/heat lost by water is approximately equal to energy gained by air; MP2. (some) thermal energy lost to the surroundings; MP3. air and water have a different specific heat capacity; MP4. air has a smaller heat capacity than water; MP5. valid attempt to show algebraically; MP6. correct algebraic attempt;	allow (Δ)Q is the same for both allow other named object e.g. radiator, walls etc. also scores MP3	3

Total for Question 6 = 11 marks