

Qu No.	Extra Information	Marks
5.1		
Level 3	Clear, coherently organised answer. Method complete with clear understanding of the experimental requirements and how the data would be analysed.	5-6
Level 2	Some structure to answer. Main steps in method covered, with some errors or omissions. Limited expression of data analysis.	3-4
Level 1	Limited structure to answer. Some steps described, with little or no control variables. No data analysis.	1-2
Level 0	No relevant content.	0
Indicative content		
<ul style="list-style-type: none"> Heat a known mass of water. To a known temperature. Transfer the water to a beaker lagged with the first material. Cover the beaker with a lid of the same material. Record the temperature and start a clock. Record the temperature drop after a fixed time. Repeat using the same mass of water with the other materials. Determine which material has the smallest temperature drop in a given time/longest time for a given temperature drop. This will be the most effective material. 		

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6.1	Energy supplied = power \times time $= 300 \times 8 \times 60$ $= 144 \times 10^3 \text{ J}$ Temperature rise = 70°C Mass = 0.45 kg Specific heat capacity = $E/(m.\Delta\theta)$ $= 144 \times 10^3/(0.45 \times 70)$ $= 4.6 \times 10^3 \text{ J/kg } ^\circ\text{C}$	 1 1 1
6.2	Any two from: <ul style="list-style-type: none"> Loss of heat to surroundings Heat absorbed by the beaker Evaporation Inaccurate thermometer/clock/balance 	2