Question number	Answer	Notes	Marks
6 (a) (i)	Substitution (including conversion of time to seconds);		3
	Re-arrangement of given equation P = W/t;	Allow W or E for energy or work. Can be implied from their working.	
	Evaluation; e.g. Energy = 75 x (22 x 60) = 99 000 (J)	Accept 1650 or 5.9 million for 2 marks.	
(ii)	Any ONE assumption from • dog does not change temperature • dog does not change power output • rate of transfer is constant (despite increase in temp of water) • no heating of outside world/surroundings/material of bag • no heating from the surroundings	Ignore unqualified '100% efficient' or 'no energy lost'	1
(iii)	Use of Q = m x c x $\Delta\theta$;		4
	Substitution of their energy, mass, c;	Allow ECF from (a)(i)	
	Evaluation of temp change;	Allow ECF from evaluation of temp change.	
	Calculation of final temp = temp change + 16; e.g. 99 000 = 8.7 x 4200 x $\Delta\theta$ temp rise = 99 000/(8.7 x 4200) = 2.7 final temp = 19 (^{o}C);	Accept 16.04... for all marks (ecf E without min->s conversion) Accept answer to 3 or more sf i.e 18.7	