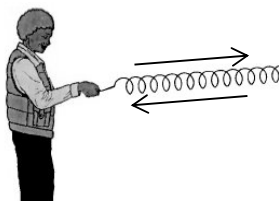


Question number	Answer	Notes	Marks
1 (a)	<p>all 4 lines;;; any 2 lines;; any one line;</p>	(dotted line is given)	3
(b) (i)	light dependent resistor / LDR;	allow <ul style="list-style-type: none"> photo sensitive resistor light sensitive resistor allow recognisable spellings	1
(ii)	thermistor;	allow recognisable spellings total marks = 5	1

Question number	Answer	Notes	Marks
4 (a) (i)	<p>arrows in opposite directions and (roughly) parallel with the length of the spring;</p> 	<p>allow</p> <ul style="list-style-type: none"> a line with a double head arrows to R & L <p>ignore arrow length</p> <p>arrows need not be adjacent to the spring</p> <p>judge by eye</p>	1
(ii)	<p>any suitable example; e.g. sound ultrasound 'p' wave</p>	<p>ignore waves in a slinky</p>	1
(b) (i)	<p>suitable horizontal line (labelled W); e.g. from peak to peak from trough to trough from midpoint to corresponding midpoint between any adjacent points in phase</p>	<p>judge by eye but should start and finish at suitable points</p>	1
(ii)	<p>2.5 (cm)</p>	<p>do not allow 5/2 allow 2 ½</p>	1
(iii)	<p>substitution into $f = 1/T$;</p> <p>evaluation;</p> <p>unit;</p> <p>e.g. $f = 1/15$ 0.067 Hz</p>	<p>no mark for equation as it is given on page 2</p> <p>-1 for POT error</p> <p>ignore answers given as fractions</p> <p>allow 0.07, 0.0667 s^{-1} condone incorrect truncation e.g. 0.06, 0.066, 0.0666</p>	3