

Oxford Cambridge and RSA Examinations

General Certificate of Secondary Education

PHYSICS PAPER 5 FOUNDATION TIER

1982/5

MARK SCHEME

Specimen Paper 2003

Qn	Expected answer	Marks	Additional guidance
1 (a)	sound (1) electrical (1) light (1)	3	
(b)	vibrate (1) increases (1) magnetic field (1) sound (1)	4	
(c) (i)	electromagnetic wave/ (short wavelength) radio waves.	1	
(c) (ii)	cooking	1	
(d) (i)	internet/books/speeches at conferences/scientific magazines/journals	1	
(ii)	Any two from:provide information to other scientists(1)provides information to government(1)provides information to the general public(1)evaluation by other scientists/AW(1)review by other scientists/AW(1)so they get their work checked(1)	2	
		(12)	

2 (a)	less people use it/less demand	1	
(b)	more energy needed to raise temp of concrete (1) for same temp rise / per deg C (1)	2	shc is greater = 2 marks
(c)	0.1	1	
(d)	76 (kg)	1	
(e)	bigger density so bigger mass in the same space (1) a bigger mass, so would store more energy (1) bigger shc, so <u>stores</u> more energy (1) bigger shc so retains energy longer (1)	2	any two .
		(7)	

Qn	Expected answer	Marks	Additional guidance
3 (a) (i)	spring is compressed (1)	1	
(ii)	bigger force would make bigger compression (1) no room to compress that much / scale to short for that much force (1)	2	
	QWC=1 . This mark should only be awarded if the answer given attempts to address the question and the quality of the description makes the meaning clear.	1	
(b) (i)	straight line graph	1	
(ii)	proportional	1	
(c) (i)	spring constant = gradient or k = F/x (1) = 4 (N/cm) (1)	2	
(ii)	400 (N/m)	1	allow ecf
(d) (i)	25 (N)	1	
(ii)	forces must balance / upward force = downward force (1) 25N + Tom's reading = 50 N, so Tom's is 25N (1)	2	accept weights shared equally
(e) (i)	0.8 (Hz)	1	
(ii)	resonance (1) (frequency of) vibration same as natural frequency (1)	2	
(iii)	change speed/slow down more/speed up more/change springs/change mass	1	
		(16)	

Qn	Expected answer	Marks	Additional guidance
4 (a) (i)	air has expanded / particles more spread out	1	
(ii)	straight line through the three points	1	
(iii)	value from graph \pm 1mm	1	
(iv)	draw line back to temperature axis (1) value from graph $\pm 5^{\circ}$ C (1)	2	
(v)	absolute zero/0°K	1	
(b)	particles move / have energy(1)particles hit surface of liquid(1)particles exert force / pressure on liquid(1)forces balance weight of liquid(1)QWC = 1.This mark should only be awarded if the answergiven attempts to address the question and thequality of the description makes the meaning clear.	4	
		(11)	

5 (a) (i)	800 (MJ)	1	
(ii)	warm up surroundings	1	
(b) (i)	million	1	
(ii)	400 000 000 (J)	1	
		(4)	
Total = 50			