



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

21ST CENTURY SCIENCE

0608/05

Paper 5

For Examination from 2009

SPECIMEN MARK SCHEME

1 hour 30 minutes

MAXIMUM MARK: 60

This document consists of **4** printed pages.



Question		Gd	Expected Answers	Mks	Additional Guidance		
Section A							
1	(a)	(i)	GG	to make it more attractive/appealing; to make people buy it / to sell more;	1 1		
		(ii)	G	it may be carcinogenic/cause cancer	1		
		(iii)	G	to colour shoe polish/industrial solvents/petrol	1		
	(b)	(i)	F	18 days	1		
		(ii)	DC	over 300/many food companies involved; tests had to be carried out;	1 1		
		(c)	BA A*	supermarkets all use the same manufacturers/depend on a handful of suppliers; the food chain is industrialised and specialised; the use of sauces in factory food is widespread;	1 1 1		
	(d)	(i)	CC	present at low levels in food; not proven to cause cancer in humans;	1 1		
		(ii)	BA	the amount of risk is not actually known; so it is better to be safe than sorry;	1 1		
		(iii)	BB	using the ALARA (as low as reasonably possible) idea; it would be very difficult to remove all of the contaminated foods; the risk from the remaining foods is so small that it can be ignored;	2	Any two	
	(e)	(i)	(i)	FE	it is present only in parts per billion/at very low levels; public analysts had to devise new testes to detect it / it is difficult to detect at very low levels	1 1	
			(ii)	DC	to get a best estimate/average/mean; to make the results more reliable; to spot and omit outliers; to avoid 'one-off' errors;	2	Any two
			(iii)	ED	sample 3/21; it will make the best estimate less reliable;	1 1	
		(iii)	FE	10–14; 12;	1 1		

		(iv)	A A*	the average/mean/best estimate from A is not within the range of B; the average/mean/best estimate from B is not within the range of A;	1 1	
	(f)		A A*	the customers had a perceived risk from the new products; which was greater than the real risk;	1 1	
	(g)		FD	preservative; to stop microbes growing on food; anti-oxidatants; to stop oxygen in the air reacting with chemicals in the food;	2	Either matching pair of answers
2	(a)	(i)	FE	diagram showing rubber strip clamped in stand with rule next to it; slotted mass attached to rubber strip;	1 1	
		(ii)	DC	for each sample: same slotted mass; same length of rubber strip;	1 1	
		(iii)	G	8.4	1	
		(iv)	D	13	1	
	(b)	(i)	D	80	1	
		(ii)	E	vulcanised rubber stretches less than non-vulcanised rubber	1	
		(iii)	A A*	the range of the two sets of results do not overlap; the range of one set of results does not contain the mean of the other;	1 1	
3	(a)	(i)	GG F	put woodlice in middle of tube; leave in light for a while; count how many are in light/A and dark/B;	1 1 1	
		(ii)	DC	keep constant the: number of woodlice; time they are left;	1 1	
		(iii)	E	more woodlice in dark/B than in light/A	1	
	(b)	(i)	BA	put wet cotton wool; in both A and B ends of tube;	1 1	
		(ii)	A A*	most woodlice in end of part B near cotton wool; darkest and dampest conditions would be near the end of part B;	1 1	

4	(a)		E	do not point or bring close to anyone/ do not eat, chew or drink in the lab/ handle sources with tongs/ ensure source is safely put away by authorised person after use;	1	
	(b)		CB	keep distance between source and detector fixed; take a suitably long time interval; repeat readings for each;	1 1	Any two
	(c)	(i)	FE	each point plotted to within +/- 1 small square; smooth curve within +/- 1 small square of each point;	1 1	
		(ii)	B	number within +/- 0.05 mm of value from candidates graph (expect 2.7)	1	
	(d)		D A*	curve begins at 18 +/- 0.05; curve ends at 5 +/- 0.05 and is concave (as original);	1 1	
	(e)	(i)	B	graph higher on grid	1	
		(ii)	A	no graph plotted (because all radiation absorbed)	1	