

Additional Applied Science A

General Certificate of Secondary Education **A326/01**

Unit 5: Communication

Mark Scheme for June 2010

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Question		Expected Answer	Mark	Rationale/Additional Guidance
1	a		[3]	first box aerial = 1 mark last box loudspeaker = 1 mark tuner anywhere before demodulator = 1 mark
	b	processor	[1]	
	c		[2]	each correct line = 1 mark
	d	i	[1]	so that you don't hear more than one channel at a time
		ii	[1] [1]	government tuner
		Total	[9]	

Question		Expected Answer	Mark	Rationale/Additional Guidance
2	a	peak is 2.5 squares above centre line (owtte); each square is worth 2.0 V	[1] [1]	allow correct indication of amplitude on graph (1) allow $2.5 \times 2.0 = 5 \text{ V}$ (1)
	b	0.06 s	[1]	
	c	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	[1]	
Total			[4]	
3	a	MWB58 (1) can't communicate by radio wave (1)	[2]	allow uses USB cable / optical fibre
	b	JCB42 (1) uses batteries / doesn't need mains supply (1)	[2]	allow OCR12 because its wireless for [1]
	c	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	[2]	correct pattern = 2 marks one mistake = 1 mark a mistake = tick in the wrong box, an extra tick or a missing tick.
Total			[6]	

Question		Expected Answer	Mark	Rationale/Additional Guidance	
4	a		[2]	<p>correct pattern = 2 marks one or two mistakes = 1 mark</p> <p>a mistake = an incorrect or missing line</p>	
	b	i	telephone / internet / cable TV / email;	[1]	allow any communication system which does not involve a mobile component - so not mobile phone or bluetooth, but accept security alarm or CCTV.
		ii	any of the following, (1) each high data rate / fast transfer; low loss of data quality; cheap (to install); secure; thin / light;	[1]	allow fast / clear / cheap
	c		analogue (1) encoded (1)	[2]	
Total			[6]		

Question		Expected Answer	Mark	Rationale/Additional Guidance
5	a	<p>any three sensible factor-reason pairs, (1) each for example:</p> <ul style="list-style-type: none"> • cost - won't sell if it's expensive; • size - must be small enough to be carried easily; • power source - batteries for portability; • range - must reach all parts of house & garden; • sound quality - so that you can hear clearly; • frequency - to stay within OfCom regulations; • reliability - must take a bashing from children; • controls - must be easy for children to use; • rechargeable battery - makes it cheaper to run • colourful - appeals to child • volume control - so that loudness can be changed 	[3]	<p>not weight or power output</p> <p>look out for repeats</p> <p>use the reason to clarify the factor.</p>
	b		[2]	<p>correct pattern = 2 marks</p> <p>one or two mistakes = 1 mark</p> <p>a mistake = an incorrect or missing line</p>
	c	(B)ECFAD(G)	[2]	<p>EC as the first two for [1]</p> <p>FAD as the last three for [1]</p> <p>look for Every Child Feeds All Day</p>
		Total	[7]	

Question		Expected Answer	Mark	Rationale/Additional Guidance	
6	a		[2]	each correct entry (owtte) (1) allow light instead of LED for (1) allow finger/push (owtte) for switch (1)	
	b	i	Morse / ASCII / USTTY / RTA / UTF	[1]	allow BCD, hexadecimal, octal allow description of Morse code
		ii	alarm bells / whistles / car horns / bugles / sirens / ships whistles / ring tones / doorbells ...	[1]	allow practical example which uses sound to convey meaning - including human voices.
		Total		[4]	
		Paper Total		[36]	

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