

Mark Scheme for January 2011

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All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the Report on the Examination.

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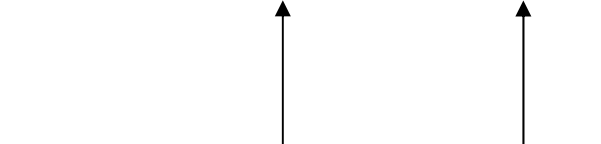
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Question	Mark Scheme	Mark	Additional Guidance																								
1 (a)	Ticks as shown. <table border="1"> <thead> <tr> <th>Item</th> <th>Storage (✓)</th> <th>Input (✓)</th> <th>Output (✓)</th> </tr> </thead> <tbody> <tr> <td>24in LCD monitor</td> <td></td> <td></td> <td>✓</td> </tr> <tr> <td>40Gb hard disk</td> <td>✓</td> <td></td> <td></td> </tr> <tr> <td>CD-ROM</td> <td>✓</td> <td></td> <td></td> </tr> <tr> <td>Keyboard</td> <td></td> <td>✓</td> <td></td> </tr> <tr> <td>Mouse</td> <td></td> <td>✓</td> <td></td> </tr> </tbody> </table>	Item	Storage (✓)	Input (✓)	Output (✓)	24in LCD monitor			✓	40Gb hard disk	✓			CD-ROM	✓			Keyboard		✓		Mouse		✓		[5]	
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40Gb hard disk	✓																										
CD-ROM	✓																										
Keyboard		✓																									
Mouse		✓																									
(b)	Headphones/speakers/earphones	[1]																									
(c)	Two from: <ul style="list-style-type: none"> • breaks copyright laws • no authorisation • illegal • has not paid for the copies • royalties not paid to author • might get caught and punished/her friends might inform on her 	[2]	Do not except just copyright																								
(d)	Scanner/CD or DVD Drive	[1]																									
(e)	Three from: <ul style="list-style-type: none"> • no paper in printer • out of ink • printer off-line/switched off • no connection/disconnected • wrong printer driver • wrong printer selected • paper jam 	[3]																									

Question	Mark Scheme	Mark	Additional Guidance												
2	<p>Lines as shown:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;"><u>Task</u></th> <th style="width: 50%;"><u>Software</u></th> </tr> </thead> <tbody> <tr> <td>Creating 3D drawings of a new kitchen</td> <td>Email client</td> </tr> <tr> <td>Creating a booklet</td> <td>Web browser</td> </tr> <tr> <td>Editing an image</td> <td>Graphics package</td> </tr> <tr> <td>Looking at information on the internet</td> <td>Computer Aided Design (CAD)</td> </tr> <tr> <td>Sending electronic messages over the internet</td> <td>Desktop publishing (DTP)</td> </tr> </tbody> </table>	<u>Task</u>	<u>Software</u>	Creating 3D drawings of a new kitchen	Email client	Creating a booklet	Web browser	Editing an image	Graphics package	Looking at information on the internet	Computer Aided Design (CAD)	Sending electronic messages over the internet	Desktop publishing (DTP)	[5]	
<u>Task</u>	<u>Software</u>														
Creating 3D drawings of a new kitchen	Email client														
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Question			Mark Scheme	Mark	Additional Guidance
3	(a)		Row 1/one	[1]	Accept A1 – D1 as long as whole range shown.
	(b)		One from: <ul style="list-style-type: none"> • 2 • 3 • 4 • 5 • 11 • 19 	[1]	No Cell References accepted.
	(c)		One cell from: <ul style="list-style-type: none"> • cells in the range B2 to B5 • cells in the range D2 to D23 One reason from: <ul style="list-style-type: none"> • automatically inserts £/currency sign • no need to type the currency sign • correct number of decimal places always shown • still numbers so can do calculations on the cell contents 	[1] [1]	Mark the two responses independently of each other i.e. an incorrectly identified cell does not prevent the award of a mark for the reason...and vice versa.
	(d)	(i)	B19	[1]	
		(ii)	<ul style="list-style-type: none"> • D19 • D22 	[2]	

Question	Mark Scheme	Mark	Additional Guidance												
(e)	<p>One mark for each of the two changes that are required as shown.</p> <p style="text-align: center;">=IF(D7>1200, D7*0.04,0)</p> <p style="text-align: center;">  </p> <p>ie 1000 should become 1200, and 0.05 should become 0.04. [2]</p> <p>One mark for all correct formula. [1]</p>	[3]	<p>Candidates should be able to accurately copy a formula at this level, so credit is given for an all correct answer.</p> <p>Accept working formula.</p>												
4	<p>Ticks as shown.</p> <table border="1"> <thead> <tr> <th>Feature</th> <th>Email (✓)</th> <th>Fax (✓)</th> </tr> </thead> <tbody> <tr> <td>It can be used to send the same document to many people at the same time</td> <td style="text-align: center;">✓</td> <td></td> </tr> <tr> <td>It can be used to send video files as attachments</td> <td style="text-align: center;">✓</td> <td></td> </tr> <tr> <td>It immediately creates a hard copy printout of the sender's document for the recipient</td> <td></td> <td style="text-align: center;">✓</td> </tr> </tbody> </table>	Feature	Email (✓)	Fax (✓)	It can be used to send the same document to many people at the same time	✓		It can be used to send video files as attachments	✓		It immediately creates a hard copy printout of the sender's document for the recipient		✓	[3]	
Feature	Email (✓)	Fax (✓)													
It can be used to send the same document to many people at the same time	✓														
It can be used to send video files as attachments	✓														
It immediately creates a hard copy printout of the sender's document for the recipient		✓													

Question		Mark Scheme	Mark	Additional Guidance
5	(a)	Two from: <ul style="list-style-type: none"> • floppy disk • CD (any type) • DVD (any type) • Blu-ray disk • flash memory (drive/stick/key/pen/fob/card) • removable/external hard disk • magnetic tape 	[2]	Do not accept USB on its own. USB is not a storage device. Do not allow "usb device" without any reference to storage. Allow any of the numerous alternatives for flash memory devices eg Flash stick.
	(b)	One way from: <ul style="list-style-type: none"> • across/over a network <ul style="list-style-type: none"> ◇ connect/transfer/copy • as attachment <ul style="list-style-type: none"> ◇ by email • use FTP <ul style="list-style-type: none"> ◇ to upload/download files 	[2]	The second mark is for description. Do not accept references to portable storage methods.

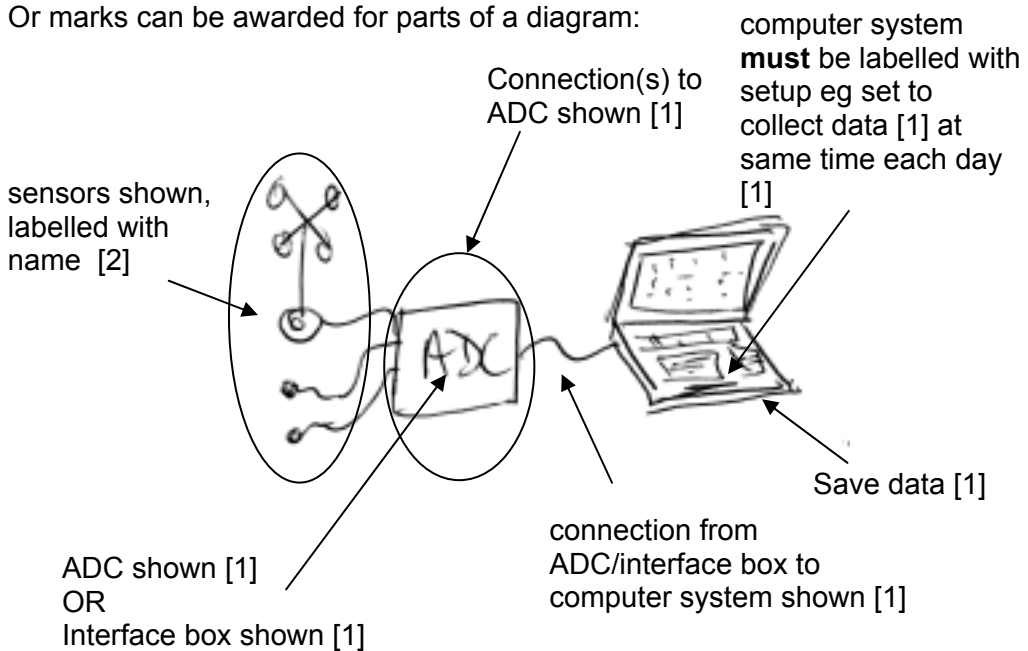
Question	Mark Scheme	Mark	Additional Guidance
6	<p>Allow the complete version of the instruction eg FORWARD for FD and vice versa. If a candidate uses instructions other than those given in the table, then maximum mark of 4.</p> <p><i>(FD 2 -----this is given)</i></p> <p>RT 90 FD 2 1 mark</p> <p>LT 90 FD 6 1 mark</p> <p>RT 90 FD 6 1 mark</p> <p>RT 90 FD 8 1 mark</p> <p>RT 90 FD 8 1 mark</p> <p>RT 90 1 mark</p> <p>- OR</p> <p>If the candidate uses the REPEAT instruction:</p> <p><i>(FD 2 -----this is given)</i></p> <p>RT 90</p>		<p>Only instructions that appear in the table should be used.</p> <p>Both or either of the long or short instruction syntax can be used.</p> <p>Logo requires spaces between some instructions and the parameter (eg REPEAT2 does not work but REPEAT 2 does) but ignore that requirement here.</p> <p>REP is not a valid short instruction for REPEAT but allow it.</p> <p>Each group must be completely correct to score the mark.</p> <p>Allow credit for correct movements that bring the turtle back to where it originated and in the correct orientation. Carefully check the movement and in this case, credit blocks of three correct instructions to a maximum of 6.</p> <p>Some candidates may write the instructions on the actual grid. So if there is NR, then check the grid to make sure this is also blank.</p>

Question	Mark Scheme	Mark	Additional Guidance
	<p>FD 2 1 mark</p> <p>LT 90 1 mark</p> <p>REPEAT 2 [FD 6 RT 90] REPEAT 2 [FD 8 RT 90]</p> <p>1 mark the use of REPEAT 1 mark the use of 2 after either REPEAT 1 mark all correct [FD 6 RT 90] in the first REPEAT 1 mark all correct [FD 8 RT 90] in the second REPEAT</p> <p>- OR</p> <p>Candidates may reverse the turtle and/or move it backwards around the shape eg</p> <p>BK 2 RT 90 1 mark</p> <p>FD 8 LT 90 1 mark</p> <p>FD 8 LT 90 1 mark</p> <p>FD 6 LT 90 1 mark</p> <p>FD 6 RT 90 1 mark</p> <p>FD 2 LT 90 1 mark</p> <p>FD 2</p>		<p>It is possible to spin the turtle around with RT 90 or LT 270 and send it around in the other direction than expected one – check the code for this and award a mark for every two correct instructions.</p>

Question	Mark Scheme	Mark	Additional Guidance
	RT 180/LT 180 1 mark Allow credit for correct movements that bring the turtle back to where it originated and in the correct orientation.	[6]	
7	Two from: 1 mark for item, 1 mark for benefit. <ul style="list-style-type: none"> • use of keypad/board/touch screen/key • can input <u>complex</u> (sequences of) code(s)/passwords <ul style="list-style-type: none"> ◇ change codes/passwords • use of biometric scanners or named example <ul style="list-style-type: none"> ◇ check and identify that individual is actually present • use of voice recognition <ul style="list-style-type: none"> ◇ difficult to copy • (use of) bar code (reader/scanner) <ul style="list-style-type: none"> ◇ quick data entry ◇ more robust than magnetic stripes • (use of) magnetic stripe (reader/scanner) <ul style="list-style-type: none"> ◇ quick data entry ◇ not easily dislodged from eg ID card • use of RFID scanner <ul style="list-style-type: none"> ◇ quick data entry ◇ very robust 	[4]	Answers should refer to setting not triggering.

Question	Mark Scheme	Mark	Additional Guidance																				
8	<p>This question to be marked using this grid:</p> <table border="1"> <thead> <tr> <th></th> <th>1 point</th> <th>2 points</th> <th>3 or more points</th> </tr> </thead> <tbody> <tr> <td>No expansions</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>1 expansion</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>2 expansions</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>3 or more expansions</td> <td>4</td> <td>5</td> <td>6</td> </tr> </tbody> </table> <p>Example points and expansions include:</p> <ul style="list-style-type: none"> • use of USER/ID and/or password/security question <ul style="list-style-type: none"> ◇ identify the user to the system/security ◇ use of password rules • Correct log off procedures <ul style="list-style-type: none"> ◇ Prevent next user from viewing files • use of encryption of files <ul style="list-style-type: none"> ◇ data/information cannot be read by unauthorised user (even if stolen/copied/accessed) • use of firewall <ul style="list-style-type: none"> ◇ to prevent (unauthorised) intrusions (from outside the network/other computers/internet) • use of anti-spyware/malware/key logging software <ul style="list-style-type: none"> ◇ to detect/prevent hackers finding out passwords etc • make sure the wireless router is secure <ul style="list-style-type: none"> ◇ password protect the router ◇ use authentication when connecting to the router • close unused ports on the internet router <ul style="list-style-type: none"> ◇ to prevent access by hackers/applications using rarely used ports • filter/block unused protocols <ul style="list-style-type: none"> ◇ eg ICMP 		1 point	2 points	3 or more points	No expansions	1	2	3	1 expansion	2	3	4	2 expansions	3	4	5	3 or more expansions	4	5	6	[6]	Do not accept references to physical security or references to removable storage media.
	1 point	2 points	3 or more points																				
No expansions	1	2	3																				
1 expansion	2	3	4																				
2 expansions	3	4	5																				
3 or more expansions	4	5	6																				

Question	Mark Scheme	Mark	Additional Guidance
9 (a)	<p>Six from:</p> <ul style="list-style-type: none"> • 2 named sensors eg <ul style="list-style-type: none"> ◇ temperature, ◇ light, ◇ moisture (to measure rainfall), ◇ humidity, ◇ pressure, ◇ wind <p>Max 2 marks for sensors</p> <ul style="list-style-type: none"> • sensors connected to ADC/connected directly to the computer system • ADC connected to computer system • (ADC is needed because) sensors use analogue signals <ul style="list-style-type: none"> ◇ computers only use/understand digital signals • interface box used <ul style="list-style-type: none"> ◇ protection of computer input circuitry ◇ more than one sensor is used • (computer system set up) to record/collect data <ul style="list-style-type: none"> ◇ at same time each day/set interval of 24 hours • (computer system set up) to save the data in appropriate format 		<p>“Sensors” is given in the question so must name the sensors.</p> <p>1 mark for each named sensor to max 2</p> <p>On a diagram:</p> <p>No mark for unlabelled computer on a diagram – the computer system is given in the question. The mark is for setting up the computer.</p> <p>1 mark allowed for connection if sensors connected directly to computer.</p>

Question	Mark Scheme	Mark	Additional Guidance
	<p>Or marks can be awarded for parts of a diagram:</p> 	[6]	
b	<p>(i) Two from:</p> <ul style="list-style-type: none"> • more accurate readings taken • more accurate time intervals • data stored directly in electronic form • computer does not forget to take readings • computer can take readings when unattended • immediate graphical display of results eg graphs, charts 	[2]	

Question	Mark Scheme	Mark	Additional Guidance
	(ii) Two from: <ul style="list-style-type: none"> • data lost if power supplies fails/battery fails/power loss • data lost if computer system develops fault • unsafe if not connected/protected from elements properly • long cable connections required • expertise/training needed for setup • unsupervised computers can be stolen/interfered with 	[2]	
Foundation Paper Total		[60]	

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