OCR
RECOGNISING ACHIEVEMENT

GCSE

ICT A

General Certificate of Secondary Education

Unit **2357/02:** Paper 1 (Higher Tier)

Mark Scheme for January 2012

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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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Question			Answer	Marks	Guidance
1			Four from: Internal memory is: • RAM – holds data/software currently in use – loses data when power is removed • ROM – holds instructions needed for the computer to start/BIOS • faster to access than backing storage Backing storage: • hard disk/CD/DVD media/external drives/memory sticks • slower than internal memory • stores data when power removed • has higher capacity than internal memory • OS cannot use/deal with very large RAM/internal memory • cost per Gbyte is lower than internal memory Maximum 3 marks if only internal memory OR backing storage memory	4	

Question			Answer	Marks	Guidance
2			Six from: • load images into photo-editing software • create new layer over lake image – for canoe image • remove background – around canoe • create transparent layer – behind/around canoe • remove border around canoe image • flip canoe image horizontally • copy canoe image – paste canoe image – twice – move canoe images into new positions • resize canoe image • rotate canoe image	6	
3	(a)	(i)	A suitable formula must calculate the total cost of making the item and subtract this from the total income from sales for that item. Suitable formulas include: =E8-(B8*D8) or =E8-(D8*B8) =(C8*D8)-(B8*D8) or with the cells in brackets in the reverse order eg D8*C8 etc. In the above, the brackets are optional. =(C8-B8)*D8 =D8*(C8-B8) 2 marks for an all correct formula 1 mark removed for each error in the formula.	2	

Question			Answer	Marks	Guidance
	(a)	(ii)	Four from • select/highlight – correct cell selected eg cell F30 – change font type/size/colour/underline/bold/italic – use a cell border • use conditional formatting – to change cell colour if loss/profit – using a function/formula • select correct options for negative numbers • ensure cell format set to currency – embolden/underline cell with label (E30)	4	
	(b)		• reduce the number of staff – reduce the value in cell D25 • reduce staff wages – reduce the value in cell C25 • reduce cost of making the item(s) – reduce the values in B5 to B17 • reduce the amount of electricity, gas, water etc – reduce the value in cell E26 • increase the selling price of each/all item(s) – increase the values in one/all of cells C5 to C17 • increase the number of items sold – increase the values in one/all of cells D5 to D17 • use goal seek – to find values that do not produce a loss (Note: eg 20 staff instead of 22 will produce a £0 value in F30…anything less than 20 produces a profit) • change values on the spreadsheet – to see the effect on profit/loss – which would automatically change 1 mark for the point, 1 mark for the expansion (max 8)	8	

<table>
<tr><th colspan="3">Question</th><th>Answer</th><th>Marks</th><th>Guidance</th></tr>
<tr><td>4</td><td>(a)</td><td></td><td>
<table>
<tr><th>Field Name</th><th>Example data</th><th>Data type</th><th>Reason for data type</th></tr>
<tr><td>Product description</td><td>18cm spade</td><td>text/ alphanumeric</td><td>any character allowed</td></tr>
<tr><td>Number in stock</td><td>14</td><td>Integer/ numeric</td><td>• allow (whole) numbers only
• can be sorted</td></tr>
<tr><td>Price</td><td>£8.34</td><td>• currency
• real number</td><td>• need to show currency symbols
• values have decimal places.</td></tr>
</table>
</td><td>6</td><td></td></tr>
<tr><td></td><td>(b)</td><td></td><td>record
• a collection of related fields/all the date pertaining to/about one item/object/eg 18cm spade

file
• a collection of records (stored on storage medium)</td><td>2</td><td></td></tr>
</table>

Question			Answer	Marks	Guidance
5			Six from: • verification – checking data entered against original – visual check – double entry • validation – computer check (of data) as it is entered – (to check that) data conforms to rules – is reasonable – valid example of use Max 4 marks for all verification or all validation.	6	
6	(a)		Six from: • use of sensors – one named sensor from pressure, light, temperature, pH – use of ADC/analogue to digital conversion • data logging – record results for later retrieval – onward transmission to computer system • storage of data – for later analysis • use of graphs/charts – on-screen – hardcopy output – immediate display – to show trends – provide alerts/warnings • use of robots/remote devices – controlled from surface vessels – video feeds to watch live action	6	

Question			Answer	Marks	Guidance
	(b)		**This question to be marked as levels of response:** **Level 3 (7-8 marks)** Candidates will address all aspects of the question by discussing a range of advantages and disadvantages of using computer systems to collect and display the data. There will be a reasoned conclusion. The information will be relevant, clear, organised and presented in a structured and coherent format. Specialist terms will be used correctly and appropriately. **Level 2 (3-6 marks)** Candidates will address all aspects of the question by discussing/considering the advantages and disadvantages of using computer systems to collect and display the data. The discussion/consideration may be one sided or limited. There will be an attempt at a conclusion. For the most part the information will be relevant and presented in a structured and coherent format. Specialist terms will be used appropriately and for the most part correctly. **Level 1 (0-2 marks)** Candidates will only address only the advantages or disadvantages of using computer systems to collect and display the data. Answers may be simplistic with little or no relevance and may be in the form of a list. There will be little or no use of specialist terms. Answers may include reference to: Advantages: • safety issues – can be used where humans cannot/should not go eg very deep water	8	

Question			Answer	Marks	Guidance
			– can be used in hazardous conditions/suitable example relating to deep sea – can capture data for longer periods of time – suitable example relating to deep sea • can record continuously without breaks for long periods of time – suitable example relating to deep sea • more accurate results – results are consistently accurate • display of results can be in real time – as graphs/charts – as tables/numbers Disadvantages • initial cost of equipment – water/weatherproof ICT/computer systems are expensive to install • breakdown of equipment – loss of power – breakages in connections/cables – difficult to repair at sea/in deep water • control issues on remote vehicles – visibility – snagging of cables – delay in action of controller in dealing with unexpected occurrences • retrieval of equipment – difficult from deep water – fouling on obstacles/suitable example relating to deep sea • results can update too quickly to follow/comprehend by humans • need to print results/store results for study		

Question			Answer	Marks	Guidance
7			**This question to be marked as levels of response:** **Level 3 (7-8 marks)** Candidates will address all aspects of the question by discussing a range of positive and negative aspects of always monitoring children's use of the internet. There will be a reasoned conclusion. The information will be relevant, clear, organised and presented in a structured and coherent format. Specialist terms will be used correctly and appropriately. **Level 2 (3-6 marks)** Candidates will address all aspects of the question by discussing/considering positive and negative aspects of always monitoring children's use of the internet. The discussion/consideration may be one sided or limited. There will be an attempt at a conclusion. For the most part the information will be relevant and presented in a structured and coherent format. Specialist terms will be used appropriately and for the most part correctly. **Level 1 (0-2 marks)** Candidates will only address only the positive or negative aspects of always monitoring children's use of the internet. Answers may be simplistic with little or no relevance and may be in the form of a list. There will be little or no use of specialist terms. Answers may include reference to: Safety issues • access to inappropriate materials – drug-related	8	

Question			Answer	Marks	Guidance
			– pornographic images – terrorist related • access to materials they have not checked first – control reading matter – religious reasons • instant messaging • control over contacts • confidentiality of data • access to chat rooms/social networking sites – control over contacts with outsiders – valid reason for controlling contacts with outsiders • uploading/sharing inappropriate images of themselves – anti-social/too much time spent on computer – no personal details revealed – house/home address/telephone/location not revealed Virus issues • downloading of software – install unwanted applications – allow virus infection – pirate software/illegal file sharing Copyright issues – plagiarism – might copy material from the internet • download/sharing of music files – without paying/illegally Trust/responsibility issues • not allowed to buy/sell goods – not legally responsible		

Question			Answer	Marks	Guidance
			• must be trusted to make own decisions – choose what/what not to do/view/when to work/play • distracted from other activities • too much protection – not allowed to choose for themselves Education/learning issues. • use for research • computer aided learning • testing/evaluation		
			Total	**60**	

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