

Applied ICT

General Certificate of Secondary Education

Unit **4872**: ICT Knowledge and Understanding

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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Question		Max Mark	Additional Guidance
1	(a)	[5]	Responses do not have to be complete; circles can point to a section provided that it is unambiguous. Do not have to circle entire example.
1	(b)	[4]	Must get improvement to get reason although the improvement may be in the reason, if so, then give both marks. Any reasonable suggestion to layout will gain marks. Not more professional for reason. The reason must match the improvement. More space – Too vague

Question				Max Mark	Additional Guidance
1	(c)	(i)	<p>Describe how Akash might have used the internet to obtain the original graphic</p> <ul style="list-style-type: none"> • Use search engine • Search for / find graphic • Using a key word(s) / phrase / or appropriate keyword stated • Download / copy graphic • Save / paste into location • import into location 	[4]	<p>There will be other ways of doing this in other systems but should be covered by the mark points. Ignore any additional stages eg add to shopping cart. Accept 'Google' as it is now in the dictionary but do not accept other brand names.</p>
1	(c)	(ii)	<p>Describe how the graphic has been altered for use in the questionnaire</p> <p>Alter graphic</p> <ul style="list-style-type: none"> • Resized • Reshape in some way (but needs to be explained) eg circle cut outline, cropped onto a circle, copied into a smaller circle (change from a square to a circle – insufficient a mark), framing tool • Copy and paste graphic • Flip / Mirrored / Reflected (not rotate or invert) • Drag / move the graphic / place <i>somewhere</i> 	[4]	<p>There will be other ways of doing this in other systems but should be covered by the mark points.</p>

Question		Max Mark	Additional Guidance
1	(d)	[4]	Be aware that whilst we require students to understand that they can not indiscriminately copy other peoples' work, the law is more flexible than is frequently suggested.
			<p>What advice would you give Akash as to whether he can or cannot use a graphic from the Internet</p> <p>Four from:</p> <ul style="list-style-type: none"> • Check whether it has a copyright sign on the image / If it has a copyright sign it is protected • Illegal under copyright laws unless • Ask for permission of owner (company) • Cannot adapt the work without permission of owner (company) • Must acknowledge the owner (company) <p>But</p> <ul style="list-style-type: none"> • The owner (company) may have waived the copyright • It may be considered incidental use and therefore OK to use • It may be considered educational/non profit making and therefore OK to use <p>Acknowledging the source is not acceptable</p>
1	(e)	[3]	
			<p>Explain what Freda meant by 'text wrapping'</p> <ul style="list-style-type: none"> • The text follows the edge of the picture / shape / table. • This is especially useful if the picture does not have a straight edge. • Enables text to begin at the top of the picture / shape / table. • Different format ie in-line / square / tight (not behind or in front of text) • Edit wrap points

Question			Max Mark	Additional Guidance
2	(a)	<p>State two suitable input devices that he may have used</p> <ul style="list-style-type: none"> • Keyboard • Mouse • Tracker ball • Touch / track pad 	[2]	He may have used a tracker ball type of device on a portable computer.
2	(b)	<p>State two suitable output devices that he may have used</p> <ul style="list-style-type: none"> • Printer • Screen / Monitor / VDU 	[2]	Correct answers only – do not accept other output devices. eg Fax is wrong.
2	(c)	<p>State one suitable storage medium Akash may have used to save the questionnaire</p> <ul style="list-style-type: none"> • Hard (disc) drive / DVD drive / CD drive / USB pen / USB flash drive / memory stick / pen drive 	[1]	RAM / Floppy disc / ROM / are all wrong CPU / USB storage device is not enough
2	(d)	(i) <p>What is a back up?</p> <ul style="list-style-type: none"> • Copy of a file 	[1]	Must imply that this is a copy NB a paper copy is acceptable
2	(d)	(ii) <p>Why does Akash back up his work?</p> <ul style="list-style-type: none"> • So that if it is destroyed / lost / attacked by a virus • He can recover his work / does not have to do it again 	[2]	Can use his backup is too vague

Question		Max Mark	Additional Guidance																		
3	(a)	[12]	<p>There will be other acceptable field names but they do need to provide information about the data contained therein, so they must be sensibly named. Do not accept very long field names ie a whole sentence.</p> <p>Use common sense as to whether a validation rule is acceptable.</p> <p>Mark only the information in the table. If a candidate adds an additional row, ignore it unless a row in the table has been crossed out.</p> <p>If data type is incorrect they may still get the validation mark if it is relevant to the field name. Can get type if fieldname is too long but relevant.</p> <p>Key field is not on the questionnaire so at this stage such an answer is wrong</p>																		
<p>Using the information in the questionnaire, complete the table below for four additional fields</p> <p>The fields in bold have already been completed.</p> <table border="1"> <thead> <tr> <th>Field Name</th> <th>Type</th> <th>Validation</th> </tr> </thead> <tbody> <tr> <td>Surname</td> <td>Text</td> <td>Length – 20 characters</td> </tr> <tr> <td>Forename</td> <td>Text</td> <td>Length –anything between 10 and 20 characters</td> </tr> <tr> <td>Gender</td> <td>Boolean or M / F</td> <td>M or F / select from drop down / tick box</td> </tr> <tr> <td>DOB</td> <td>Date</td> <td>Any reasonable range eg 1/1/1993 – 1/1/2003 Format check eg dd/mm/yyyy</td> </tr> <tr> <td>Pay / Q2</td> <td>Numeric / Number / Real / Currency</td> <td>Any reasonable range eg £0 - £10</td> </tr> </tbody> </table>		Field Name	Type	Validation	Surname	Text	Length – 20 characters	Forename	Text	Length –anything between 10 and 20 characters	Gender	Boolean or M / F	M or F / select from drop down / tick box	DOB	Date	Any reasonable range eg 1/1/1993 – 1/1/2003 Format check eg dd/mm/yyyy	Pay / Q2	Numeric / Number / Real / Currency	Any reasonable range eg £0 - £10		
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Question		Max Mark	Additional Guidance
3	(b)	[2]	<p>State one additional item of personal information that Akash needs to collect. Give a reason why he needs this information</p> <p>eg</p> <ul style="list-style-type: none"> • Tutor group / form • Email address • Home address • (Mobile) phone number • Contact details / address <p><u>Reasons</u></p> <ul style="list-style-type: none"> • To contact the person <p>There may be other acceptable answers and reasons.</p> <p>Ability to dance is not personal information Medical is incorrect because the questionnaire is to find out the popularity of the sessions therefore not relevant at this stage.</p>
3	(c)	[2]	<p>What is the purpose of a key field?</p> <ul style="list-style-type: none"> • Unique • Identifier • Link tables / relationships <p>Or words to this effect.</p>

Question			Max Mark	Additional Guidance
3	(d)	<p>Give four reasons why Akash has decided to put details about each student who is interested in attending the street dancing club into a computerised database</p> <ul style="list-style-type: none"> • Search / find / query • Sort into groups • Present information to the school council. • Ease of editing • Paper more easily damaged / lost • Less storage space • Accessible from all over the school • Easier to print lists / make copies / make back-ups • Can mail merge • Send emails 	[4]	<p>There may be other acceptable answers but they must relate to the scenario.</p> <p>Less space is not sufficient</p> <p>Search / Sort is not sufficient must be qualified. Looked up is wrong</p>
4	(a)	<p>(i) Give one way that the width of the cells in column A could have been increased</p> <ul style="list-style-type: none"> • Double click on the column boundary between A and B. <p>OR</p> <ul style="list-style-type: none"> • Click on the column boundary (between columns A and B headings) and drag to the desired width <p>OR</p> <ul style="list-style-type: none"> • Go to formatting / properties and set the width 	[1]	<p>There may be other answers using different type of software.</p>

Question			Max Mark	Additional Guidance
4	(a)	(ii)	[2]	<p>State the formula that would be used in cell B8</p> <ul style="list-style-type: none"> (=) $B5 * B6$ (=) $B6 * B5$ (=) $B5 \times B6$ is only worth 1 mark $B8 = B5*B6$ is only worth 1 mark <p>Straight forward question. Notation eg 5B rather than B5 is incorrect. Only 1 mark if incorporated the word SUM in a formula which works.</p>
4	(a)	(iii)	[2]	<p>State the formula that would be used in cell B10</p> <ul style="list-style-type: none"> (=) $B8 - B2$ (=) $B2 - B8$ is only worth 1 mark (=) $(B5 * B6) - B2$ (=) $(B5 \times B6) - B2$ (=) $B5 * B6 - B2$ $B10 = B8 - B2$ is only worth 1 mark <p>Straight forward question these are the only acceptable answers. Notation error (see 4 (a) (ii) is incorrect Only 1 mark if incorporated the word SUM in a formula which works</p> <ul style="list-style-type: none"> (=) $(B5 * B6) + B2$ is incorrect
4	(b)		[2]	<p>What does formatted to currency mean?</p> <ul style="list-style-type: none"> Data automatically change to (1) Two decimal places (1) £ sign placed in front of the data (or other currency) Decimal points placed under each other <p>Take care that the student is not merely repeating the question. An example will also suffice £10.00 (2)</p>

Question		Max Mark	Additional Guidance
4	(c)	[5]	<p>Explain how Freda can use the features in her spreadsheet model to show Akash how the club could avoid making a loss</p> <ul style="list-style-type: none"> • Freda can carry out what ifs. • She can alter the number of students / B5(1) She can alter the price that they are prepared to pay / B6 (1) and see the effect on the profit /loss (1) • This is an effective way of explaining a complex concept. • Produce a break-even chart • Decrease instructors salary / B2 (1) <p>OR</p> <ul style="list-style-type: none"> • A rational explanation of 'Goal seeking' carried out by the computer automatically, warrants full marks (5). <p>This is a high level question and is testing whether the candidate understands the use of 'What ifs'. If the candidate clearly understands 'goal seeking' (which is unlikely at this level) then this is a bonus and should be awarded all five marks</p> <p>To produce a chart is not enough</p>

Question				Max Mark	Additional Guidance
5	(a)	(i)	<p>Why is it inappropriate to name his folders in this manner?</p> <ul style="list-style-type: none"> • Difficult / takes longer to find files / information • Akash x means nothing / names are so alike • Do not know what is in the folders • Easier to put files in the wrong folder 	[2]	
5	(a)	(ii)	<p>Complete the table below to show a better way of naming his folders</p> <ul style="list-style-type: none"> • 1 mark for each sensible name eg Akash 1 – ICT Work Akash 2 – School Work 	[2]	Use your judgement as to whether the names are sensible or not.
5	(a)	(iii)	<p>Explain how he could organise this folder so that he can readily find a file</p> <ul style="list-style-type: none"> • Use/create subfolders inside Akash 5 • For different categories / members, finance and instructor / different applications • Name the folders so that you will know what they contain / example name given for at least one folder • Move the files into the appropriate folders 	[4]	
5	(b)		<p>State two potential health risks that could be caused by working at a computer for long periods of time. For each stat how the health risk can be reduced</p> <ul style="list-style-type: none"> • Can cause headaches – eg take a break / lower screen glare • Eye strain eg regularly look away from the computer / room correctly lit • Back aches eg use a chair with a back rest / sitting properly. Not a comfortable chair • RSI – eg use a wrist rest / ergonomic keyboard <p>Not epilepsy, or take a break for RSI</p>	[2]	Note that headaches and eye strain are both valid answers – 2 marks.

Question			Max Mark	Additional Guidance
5	(c)	<p>Give two ways that Akash could protect his files from unauthorised access</p> <ul style="list-style-type: none"> • Password to prevent opening the database / login account • Passwords to access the database • Encryption • Set access rights to the database • Installing firewalls • Physical security (needs to be qualified) • Installing anti-spyware (software) <p>Not install antiviral software, put it on a memory stick and delete the original</p>	[2]	Use common sense for physical security in the home

Question		Max Mark	Additional Guidance
6	(a)		<p>Explain the term 'Web browser'</p> <ul style="list-style-type: none"> • Software / application • For retrieving information resources • For presenting information resources • For traversing information resources / to surf the internet • On the World Wide Web (condone Internet) • Provide file transfer • Provide email <p>Search for a website is wrong</p>
6	(b)		<p>Explain the term 'hyperlink'</p> <ul style="list-style-type: none"> • Text, images, hotspot (1) links to another place in the same document (1) or to an entirely different document (1). • You click on the hyperlink to follow the link
6	(c)		<p>Explain the term 'on-line encyclopaedia'</p> <ul style="list-style-type: none"> • Comprehensive (database) holding information / all the facts • From all branches of knowledge • Held on the World Wide Web (condone Internet) • Searchable • Using key words • Can navigate by clicking links

Question			Max Mark	Additional Guidance
6	(d)	<p>Explain the term 'search engine'</p> <ul style="list-style-type: none"> • Software application • Designed to search for information • On the World Wide Web (condone Internet) • The search results are usually presented in a list of results (hits) / websites that you can choose from / links for lots of sites 	[3]	Some search engines also mine data but we are unlikely to get this answer
6	(e)	<p>Explain the term 'favourite web addresses'</p> <ul style="list-style-type: none"> • Locally (1) stored / saved (1) • Uniform Resource Identifier / Locator (URI/L) • Generally accessed through a menu (1) in the user's web browser (1) • Allows quick access to a web page • Allows access without retyping / remembering • Folders are commonly used for organisation 	[3]	

Question		Max Mark	Additional Guidance
7	<p>Discuss the two methods:</p> <ul style="list-style-type: none"> • Searching the internet • Email other schools in the area to ask if they could recommend an instructor. <p>Marking this question involves reading the whole question through, noting what is there and placing the response in a band. Marks within a band are awarded depending on the quality of the answer.</p> <p>BANDED RESPONSE MARK SCHEME: This question to be marked as levels of response:</p> <p>Level 3 (7–8 marks)</p> <p>Candidates will address all aspects of the question and discuss the advantages/disadvantages of both methods. They will provide at least six of the points listed below including examples from both columns. The issues raised will be justified. The information will be relevant, clear, organised and presented in a structured and coherent format. Specialist terms will be used correctly and appropriately. There will be a reasoned conclusion.</p> <p>Level 2 (4–6 marks)</p> <p>Candidates will address all aspects of the question and discuss/consider the two methods and make an attempt at comparing both. They will provide at least four of the points listed below including examples from both columns. 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.</p>	[8]	<p>Accept advantages for one and then the similar disadvantage for the other provided that they are not simple responses eg likely to find someone / unlikely to find someone is not worth two marks.</p> <p>The question is designed so that candidates think about how they are going to obtain information and the best way of achieving this. Both methods are acceptable methods of obtaining the relevant information this but the success depends on a number of factors.</p>

Question			Max Mark	Additional Guidance
		<p>Level 1 (0–3 marks)</p> <p>Candidates will only address some aspects of the question, and give basic advantages/disadvantages of the two methods without comparing the two. They may not include examples from both columns. Answers may be simplistic with little or no relevance and may be in the form of a list.</p> <p>There will be little or no use of specialist terms.</p> <ul style="list-style-type: none"> • Probably have an idea of ability • Probably has CRB or knowledge about some type of check 		

Question				Max Mark	Additional Guidance
		<p><u>Internet Searches</u></p> <ul style="list-style-type: none"> • Potentially a large number of instructors will be found • May find an association of street dancers (1) whereby recommendations (1) qualifications are attested (1) • Likely to find someone • Initial research likely to be quite quick • There may be a video etc on the website • Much wider audience (1) but may not be in area or even same country so using a website is pointless (1) • May not be trustworthy 	<p><u>Email schools in the County</u></p> <ul style="list-style-type: none"> • If someone is found then school can recommend (or not) • Will have been vetted by the school • Probably more local. • The sender may know that there is a high probability of success • Instructors may not have website 		Nothing for advantages/disadvantages of the Internet in general
Total Marks				[100]	

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