

**MARK SCHEME for the May/June 2010 question paper  
for the guidance of teachers**

**9713 APPLIED ICT**

**9713/12**

Paper 12 (Written A), maximum raw mark 80

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes must be read in conjunction with the question papers and the report on the examination.

- CIE will not enter into discussions or correspondence in connection with these mark schemes.

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Question Number	Question (including any source details)	Part Mark
1 (a)	<p><b>Three</b> from:</p> <ul style="list-style-type: none"> <li>Be well motivated</li> <li>Have good communication skills</li> <li>Have good self-discipline/doesn't require supervision</li> <li>Have good time management skills/can meet deadlines</li> <li>Be well organised</li> </ul>	[3]
(b)	<p><b>Three</b> from:</p> <ul style="list-style-type: none"> <li>Broadband connection/router to connect to the internet...</li> <li>...to send emails to company/manager(Faisal)</li> <li>A fax machine to send/receive (translated) documents/documents (that need translating)</li> <li>A landline/mobile phone to communicate with Faisal/other translators</li> <li>A printer to print documents...</li> <li>...for faxing</li> <li>...for translating (large documents)/after translating</li> <li>A scanner to input documents ready for translation/that have been translated...</li> <li>...so they can be sent as email attachments</li> <li>Video conferencing hardware to communicate with other workers</li> </ul>	[3]
2 (a)	<p><b>Three</b> from:</p> <ul style="list-style-type: none"> <li>Webcam to input video</li> <li>Webcam so that images of each worker can be transmitted/sent</li> <li>Microphone to input voices</li> <li>Microphone so that workers can speak <u>with each other/Faisal</u></li> <li>Speakers/headset to output voices</li> <li>Speakers in order to hear other workers/Faisal</li> </ul>	[3]
(b)	<p><b>Two</b> from:</p> <ul style="list-style-type: none"> <li>You can see the <u>facial expressions/body language</u> of other participants.</li> <li>It is cheaper to <u>set up/operate/organise</u> than a phone conference.</li> <li>You can see/amend/share documents that you want to discuss with each other.</li> <li>Easier to identify <u>whose turn it is/who wants to contribute next.</u></li> </ul>	[2]

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<p>3 (a)</p>	<p><b>Four</b> from:</p> <p><b>Computer/software</b>  Helps to ensure that project is completed within <u>timescale and budget</u>.  Organises meeting times.  Provides alerts regarding imminent start of meetings.  Can organise Ali's tasks.  Makes it possible to ensure members of a team have equitable workloads.  Provides a critical path analysis.  Identifies project progress.  Helps daily and weekly planning.  Can act as a stopwatch device.  Reminds the user how long they have been working on that task/how long left.  Enables Ali to see what emphasis is being placed on each task.  Can be used to produce Gantt charts.</p> <p><b>Gantt charts</b>  Help to plan out the tasks that are involved in a process.  Graphically represent progress in projects.  Are used to plan the whole process including parallel and sequential activities.  Used to arrange tasks so that parallel tasks finish at the same time.</p> <p>Software has a Calendar function.</p> <p><b>Calendar</b>  Enables Ali to keep a record of his appointments/meeting times.  Advises Ali of/Ali could easily see any clashes (of meetings scheduled for the same time and date).  Public calendar identifies a suitable time for a meeting of all members of a team.</p>	<p>[4]</p>
<p>(b)</p>	<p><b>Six</b> from:</p> <p>Web authoring package to create web site  Word-processing package for typing text /tables etc.  DTP for creating pages for website  Spreadsheet to create statistical tables/graphs for inclusion in the website  Database to create files of data for inclusion in the website  Communications software to connect to Internet  Web browser to see how the web site appears to users  Software for editing scanned/downloaded images</p>	<p>[6]</p>

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<b>(c)</b>	<p><b>Five</b> from:</p> <p>It is cheaper than paying/employing a programmer/designer to create/maintain it.  A Pop-up instantly grabs the attention of the customer.  Pop ups may create unhappy customers who may avoid that company in future/  will have poor impression of the company/will tend to ignore them.  Customers will use pop-up blocking (software) which doesn't allow them to appear.  Pop-uppers are small windows placed underneath the web page being accessed.  Don't appear to users until they close the page they are working on.  Are not removed by pop-up blocking.  The customer regards pop-uppers as less of an inconvenience than pop-ups.  Pop-ups and pop-uppers can both be linked to the organisation's own website.  Can make their own website better suited to their needs.  Own website has shorter delay in updating/improving advertising.  Company doesn't have as much control over the host's website as it would over  its own.  May be so many other companies' advertising on host website the company's  may not be seen/not as much advertising can be used/limited space available.  More people may see it if it's on someone else's website.</p> <p>One mark is available for reasoned conclusion.</p>	[5]
<b>(d)</b>	<p><b>Four</b> from:</p> <p>Can be produced using own PCs and printer.  Flyer doesn't take very long to produce.  You can distribute them so that they only go to the people you want to see them.  It is a cheaper method than creating a web page/paying a company to advertise  on their website/advertising on local radio/television.  Prospective customers may not have computers/internet/regular electricity supply.  You can target specific groups/Can't guarantee all the intended audience would  see a poster/web site.</p>	[4]

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<p><b>4 (a)</b></p>	<p><b>Four</b> features from:  An easy-to-remember domain name.  A secure method of accepting payments.  Descriptions/pricing/photos of goods.  Usernames and passwords <u>to make the system secure</u>.  Customers are able to contact shop directly via e-mail.  Allows customers to make use of their orders stored in a database.  Allows customers to see their order and maintain their own accounts.  A shopping basket to hold goods you are going to buy.  Prospective customers should be able to use a temporary shopping basket if they are a 'guest'.  Permanent shopping basket if they are returning customers.  searches and advanced searches can be carried out <u>easily</u>.  Allow customers to progress smoothly to the checkout/navigate <u>from category to category easily</u>.  Orders can be tracked.  Wishlists which enable users to store the goods they might want to buy in the future.  'People who bought A also bought B' recommendations.</p>	<p>[4]</p>
<p><b>(b)</b></p>	<p><b>Three</b> from:  The customer's personal data/payment details can be intercepted by a hacker.  Personal data/payment details could be used by the hacker to defraud the shop.  Personal data/payment details could be used by the hacker to defraud the customer.  Personal data/payment details could be used to log on to the shop's computer system and order a large number of products....  .....products can be dispatched to another address other than the credit owner's.  The hacker can sell on the goods.  Credit card details can be used to make purchases at a number of other shops.</p>	<p>[3]</p>
<p><b>(c)</b></p>	<p><b>Six</b> from:  Personal data are encrypted when they are transferred over the Internet....  ...If a hacker intercepts data is unable to decipher the meaning of the data.  ...The data can only be decoded if the receiving network server has the correct encryption key.  More common for fraudsters to use methods such as phishing, pharming.  More common to attach spyware in order to obtain customer data.  If customer's credit or debit card is used fraudulently, in many countries the card company must refund them.  Customer's have consumer rights such as refunds for faulty goods.  Generally, customers only ever use reputable sites.  Hackers can intercept personal data/payment details.  Could be a fraudulent website.  You can't check the quality of the goods/you can't be sure the goods are in stock/goods don't arrive/are of the wrong quality/wrong goods delivered.  The order confirmation may be delayed/not be received.  Employees who have access to the payment details must sign a duty of confidence document.</p> <p>One mark is available for reasoned conclusion.</p>	<p>[6]</p>

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<p><b>5 (a)</b></p>	<p><b>Five</b> from:  Phone calls are processed using interactive voice response (IVR) software.  Does not require a human response.  Automatic services such as giving account information can be accessed by the caller.  CTI allows computers to direct the phone call to appropriate operator.  Calls can be queued/put on hold.  Combines the <u>data and voice input to the system.</u>  Displays the caller's number/number dialled.  Multiple dialling techniques/fast dial/ preview/predictive dial.  Description of first-party call control.  Description of third-party call control.</p>	<p>[5]</p>
<p><b>(b)</b></p>	<p><b>Four</b> from:  Staring at a computer screen <b>all day</b> can cause problems with one's sight.  Typing at a keyboard <b>continuously</b> can cause RSI.  Gripping a mouse and <b>repetitive</b> clicking can cause carpal tunnel syndrome/ RSI  Sitting in the <b>same position/with wrong posture all day</b> can cause lower back pain.  Staring at a computer screen <b>all day</b> can cause eye strain/headaches.  <b>Poor positioning</b> of screen can cause upper back/neck/shoulder pain/ eyestrain/headaches.  <b>Glare</b> from screen can cause eye strain/headaches.  <b>Too many plugs</b> connected to a socket <u>can be a fire hazard.</u>  Bare wires/spilt drinks <u>can cause electrocution.</u>  Trailing wires can cause tripping.</p>	<p>[4]</p>
<p><b>(c)</b></p>	<p><b>Four descriptions</b> from:  Some workers may have to/will have the opportunity – to go part time.  There may be the opportunity to job share.  There may be the opportunity for flexible working hours.  Compressed hours may become available.  Some operators are able to work from home.  May lead to more operators being given jobs.</p>	<p>[4]</p>

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6	(a)	Distribute/Hand out written questionnaires to system users (to complete)	[1]																						
		Interview current system users face to face	[1]																						
		Examining documents <b><u>used in the current system</u></b>	[1]																						
	(b)	<b>Four from each column:</b>																							
		<table border="1"> <thead> <tr> <th>Item</th> <th>Factors: an example of how:</th> </tr> </thead> <tbody> <tr> <td>Specifying the required hardware and software</td> <td>the volume of data determines the choice of output devices.</td> </tr> <tr> <td></td> <td>the order that data will be output affects the choice of storage devices.</td> </tr> <tr> <td>Designing data collection forms/ screen layouts</td> <td>the user requirements influences the format</td> </tr> <tr> <td></td> <td>the output required from system influences the design</td> </tr> <tr> <td></td> <td>file structures affect the design</td> </tr> <tr> <td>Designing report layouts/screen displays</td> <td>the content and presentation of report layouts/screen displays depend on the requirements of the users</td> </tr> <tr> <td>Designing validation routines</td> <td>the form of input affects these.</td> </tr> <tr> <td></td> <td>the file structure affects these.</td> </tr> <tr> <td>Designing the required data/file structures/programming specifications</td> <td>the data structures/programming depend on the types of processing</td> </tr> <tr> <td></td> <td>the file structure depends on the input and output structures</td> </tr> </tbody> </table>	Item	Factors: an example of how:	Specifying the required hardware and software	the volume of data determines the choice of output devices.		the order that data will be output affects the choice of storage devices.	Designing data collection forms/ screen layouts	the user requirements influences the format		the output required from system influences the design		file structures affect the design	Designing report layouts/screen displays	the content and presentation of report layouts/screen displays depend on the requirements of the users	Designing validation routines	the form of input affects these.		the file structure affects these.	Designing the required data/file structures/programming specifications	the data structures/programming depend on the types of processing		the file structure depends on the input and output structures	[8]
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7 (a)	<p><b>Two</b> from:  Produced specifically for systems analysts/programmers.  Helps when the system needs further development/upgrading/improvements.  Helpful should any errors occur in the system and system needs amending to get rid of these errors.</p>	[2]
(b)	<p><b>Eight</b> from:  Systems documentation....  ....provides a detailed overview of the whole system.  Test data/test plans so that systems analyst <u>can see the results of these/test results.</u>  Can use this data again to check if errors have been successfully removed.  The results of the systems analysis/DFD diagrams.  What is expected of the system/purpose of the system.  Overall design decisions such as the choice of hardware and software/file, input and output structures.  Systems flowcharts.</p> <p>Program documentation....  ....produced for program code that has been written.  Description of the software/purpose of the software.  Reasons for choosing those pieces of existing software that were used...  ..... instead of the programmer having to write code.  Input and output data formats.  Program flowcharts/algorithms.  Program listing – this will be a complete copy of the code used...  ...and annotation explaining what each module of code does.  Notes that will help any future programmer to make modifications to the system.</p>	[8]
(c)	<p><b>Three</b> from:  (A table) showing the type of test, test data, expected results, actual results and a comment on the results. (One mark for three column headings, two marks for 5 column headings.)  Test results will help the systems analyst to make judgements.  Comparison will be made of the actual results with the expected results.  If the results are not as expected system will need to refined.  Comments in the comparison table contribute to the evaluation.</p>	[3]