

**MARK SCHEME for the May/June 2011 question paper  
for the guidance of teachers**

**9713 APPLIED ICT**

**9713/31**

Paper 3 (Written B), 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.

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

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- 1 (a) (i) Any **two** points from:  
Compatible format for media playing systems/  
  
Playback music files\ability to listen to music files  
Data is compressed compared to a CD  
Results in 90% compression/- reducing file size/additional storage  
NOT any comment on quality [2]
- (ii) Any **two** points from:  
Enables music to be transferred to from the HMC (note to markers include playing or recording)  
Upload firmware upgrades  
Linking to other hardware [2]
- (iii) Any **two** points from:  
SD is used to record programmes on DAB radio  
Programmes/files can be transferred to music centre  
Music on music centre can be recorded onto SD card and transferred to mobile phone  
Additional storage device [2]
- (b) Any **four** from:  
Computer dials a telephone number from a list selected people/randomly  
System displays details of interviewee  
Interviewee asked a question from a script  
Response recorded on operator's screen  
Script software decides on next question  
Record stored  
Responses analysed [4]
- (c) Any **three** points from  
Because questions are multiple choice can be directly input into computer system  
Requiring no human interpretation  
Results stored in a database/spreadsheet  
Filters can be applied to select interviewees e.g. by age group/gender  
Results presented as report/graph [3]

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- 2 (a) Any **three** points from  
 Company inputs predicted costs/values as data  
 Model outputs production costs/staff required  
 Profit prediction made  
 System values are adjusted-‘what if’ scenario  
 Use of goal-seek/break even point  
 Costs of individual parts are totalled [3]
- (b) Any **three** points from:  
 Cost of materials  
 Cost of manufacturing  
 Projected sales figures  
 Estimated selling price of system  
 Projected economic conditions  
 Profit margin required  
 Variable to adjust for break even calculation [3]
- (c) Use of any **four** of the following:  
 Milestones identified  
 ...such as selection of hardware components  
 Time required for each stage set  
 Project broken into smaller tasks  
 Tasks that can run in parallel identified  
 ...such as write software and design casing  
 Tasks dependent upon previous ones identified  
 ...e.g. cannot determine software until hardware decided  
 % Progress reported week by week  
 Alarms if task is late/ reminder when task due to finish or start  
 Critical path identified through whole project  
 Allocate resources  
 Identify workloads  
 GANTT chart illustrating project  
 Use of PERT  
 Event chain diagrams [4]

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- 3 (a)** Any **four** points from:  
 Intranets provide secure local email  
 Intranets enable employees to co-ordinate activities  
 e.g. book video conference suite/arrange a meeting through seeing one another's diaries  
 Intranet provides fast access to company data  
 Hold company templates  
 Hold company specific information secure from the general public  
 Forums can be set up for discussion of confidential matters  
 Provides a means of informing employees about news  
 NOT video conferencing [4]
- (b)** Any **four** points from:  
 ID theft  
 Money taken from personal accounts  
 Credit card theft when card account number/PIN intercepted  
 Delete Worries about on-line banking  
 In reality computer fraud can be prevented by encryption of transmitted data  
 The probability of being hacked is very low  
 Phishing or Pharming is a problem  
 Too easy to be fooled into providing personal details  
 Keyloggers can be used  
 Use of personal information
- To commit criminal acts resulting in blame for individual
  - Purchase of items charged to individual
- [4]
- 4 (a)** Any **three** points from:  
 Login boxes/user id and password  
 Remember my user id  
 Registration hyperlink for customers to set up Internet banking  
 Hyperlink to other bank services e.g. loans application  
 Password reminder facility  
 FAQ/help  
 Information about bank's security software  
 Download link for security software  
 Warning about phishing  
 Accessibility options  
 Indication of security e.g. padlock in browser  
 Not security question [3]
- (b)** Any **three** points from:  
 Device to generate one off code/TAN sent by email  
 Use of chip and PIN  
 IP address logging  
 Security question/letters from a security code (NOT password but memorable data)  
 Biometric device e.g. face recognition using webcam or fingerprint  
 Digital certificate  
 Bank to call back/text message customers [3]

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(c) Any **three** from:

(i) Virtual Private Network  
 Secure means of tunnelling using public network  
 Cheaper than creating a private WAN  
 Used by staff remotely to access system [3]

(ii) Voice over Internet Protocol  
 Uses Internet/Intranet to carry telephone calls  
 Sound input is compressed for transmission  
 Requires dedicated software  
 Inter-branch/international calls are cheaper than landline calls [3]

(iv) Proxy server  
 Acts as a buffer between a LAN and a WAN/Internet  
 Filters requests from users/returned pages  
 Uses a cache of requested pages hence reducing time to download a page  
 Only requires 1 network link to the Internet  
 Enables better management of the usage of the Internet  
 Forwards user requests to appropriate server  
 Returns web pages requested if allowed  
 Stores pages for faster browsing [3]

5 Any **eight** points comparing from:  
 Hardware and software comparison  
 e.g. bandwidth, size of screens, costs, dedicated suites  
 How they are used compared  
 e.g. high level directors discussion compared to learning projects in school  
 Security considerations  
 communications requirements  
 Quality of transmission  
 Maximum of 6 marks for just one system [8]

6 Any **three** points from:  
 Much faster to reach a decision for bank  
 Reduced number of bad debts for bank  
 ...gives more accurate advice than a bank employee  
 Leading to better customer satisfaction  
 Reduced staffing required to deal with customer requests  
 ...lowers payroll [3]

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- 7** Any **six** points from:
- Population could apply to go on electoral register
  - Read local government news
  - Log into their local tax records
  - Email local government
  - Apply for official documents e.g. driving licence or passport
  - Search for local government decisions on planning/budgets/policies
  - Read a blog from local government
  - Look for a job with local government
  - Pay tax/bills to local government
  - Apply for grants
  - Identify members of govt
  - Look up maps
  - Access details of registered businesses
  - Find details of local facilities Opening times of services/schools/tourism/hospitals
  - Voting online for local elections
  - Submit a tender for a contract
  - NOT online shopping except for specific Local Gov items e.g. book to pass the driving test [6]
- 8 (a)** Any **five** points from:
- ICT components have fallen in price due to improvements in production
  - Telecomms cost is also falling
  - New smaller processors have produced smaller/cheaper PCs
  - Developments in ICT encourages recycling of older equipment that can be used
  - Advances in devices enables disabled people to use ICT
  - Online shopping enables housebound people freedom of choice
  - More/cheaper Computer based training
  - Computers provided in public places for people to use
  - Open source software has improved for users
  - Electric power provided manually- e.g. windup systems
  - Broadband is being introduced into more areas/attracting more customers
  - Improved telecom links to remote areas e.g. more satellites
  - ...more widespread network for mobile phones
  - Enables information to be more accessible
  - Mobile phone broadband development [5]
- (b)** Any **four** from:
- Provide courses in using computers
  - Develop CBL courses for self instruction
  - Provide trainers to go into villages to run courses
  - Purchase low cost systems for the villages
  - Prepare written training material for villages
  - Provide the necessary telecoms hardware for villages
  - Creating forums for self help [4]

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9 Any **eight** points. Max 5 for bullet points if fail to describe any preventative measures

<b>problem</b>	<b>prevention</b>
unauthorised access to a system	<ul style="list-style-type: none"> <li>• Not very common due to security in place such as firewall</li> <li>• And encryption will make reading the data even more difficult</li> <li>• Use of non-dictionary passwords</li> <li>• Regularly changing password</li> <li>• Use of access rights to limit users</li> </ul>
Deliberate sending of malware	<ul style="list-style-type: none"> <li>• Ensure anti-software is kept up to date</li> </ul>
Phishing	<ul style="list-style-type: none"> <li>• Do not open unknown emails</li> <li>• use filtering of emails</li> </ul>
Pharming	<ul style="list-style-type: none"> <li>• Advise users of the risk</li> </ul>
Cyberbullying	<ul style="list-style-type: none"> <li>• Prevented by education young people</li> </ul>
Grooming	<ul style="list-style-type: none"> <li>• Prevented by education young people</li> </ul>
Spam	<ul style="list-style-type: none"> <li>• Use of spam filters</li> </ul>

[8]