

**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.

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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

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

[8]