UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
GCE Advanced Subsidiary Level and GCE Advanced Level

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.

Cambridge is publishing the mark schemes for the May/June 2011 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

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]

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]

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]

(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]

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]

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

problem	prevention
unauthorised access to a system	• 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	• Ensure anti-software is kept up to date
Phishing	• Do not open unknown emails • use filtering of emails
Pharming	• Advise users of the risk
Cyberbullying	• Prevented by education young people
Grooming	• Prevented by education young people
Spam	• Use of spam filters

[8]

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