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
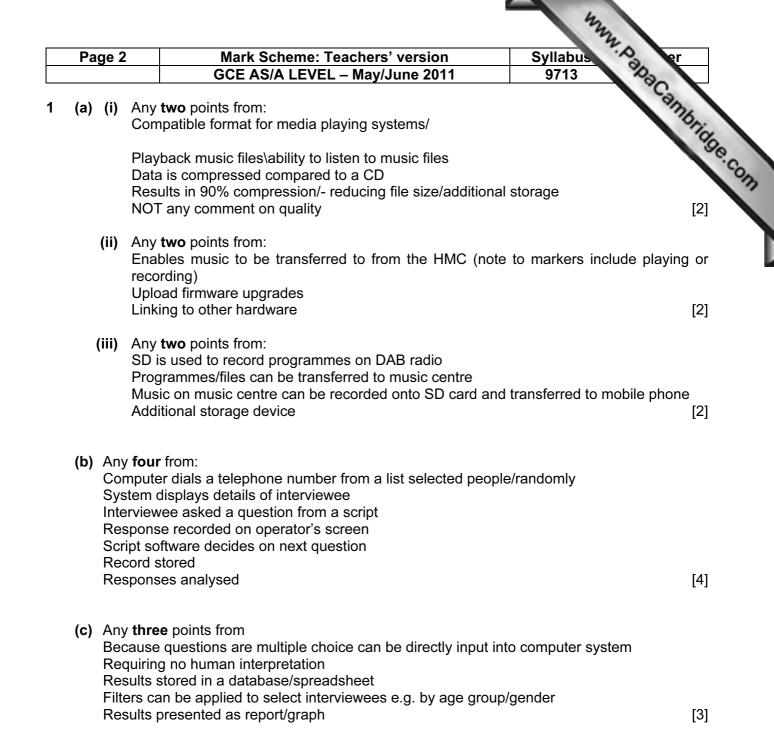
9713 APPLIED ICT

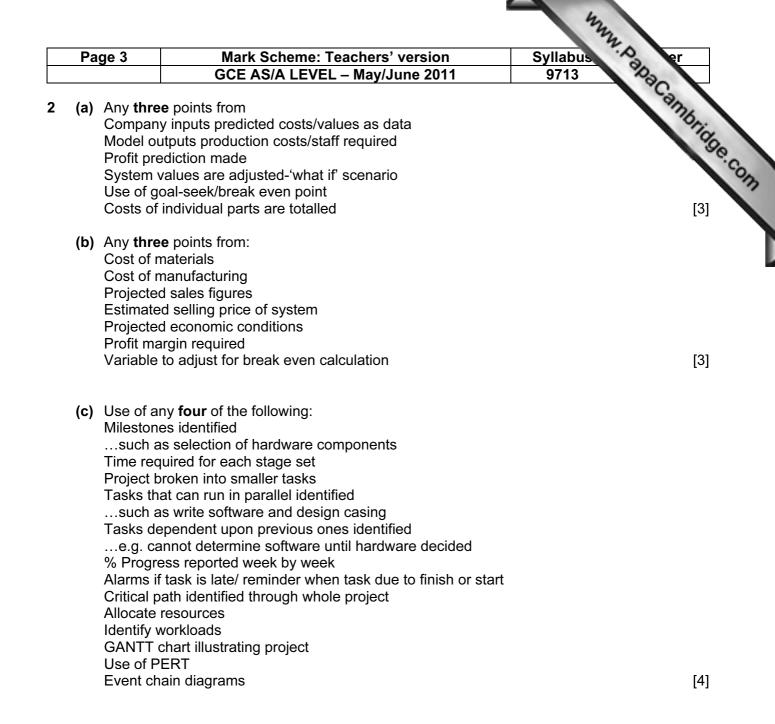9713/31   Paper 3 (Written B), maximum raw mark 80

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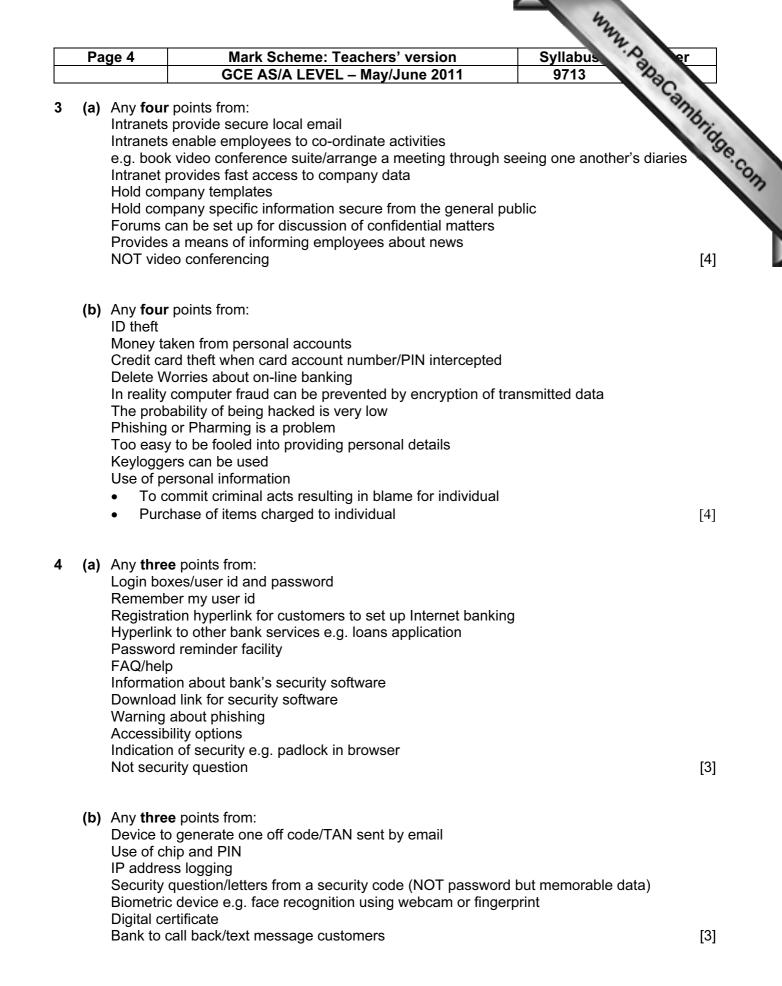
Mark schemes must be read in conjunction with the question papers and the report on the examination.

- 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]