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

(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

(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
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

(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 (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

(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
(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 government
- 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

<table>
<thead>
<tr>
<th>problem</th>
<th>prevention</th>
</tr>
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<tbody>
<tr>
<td>unauthorised access to a system</td>
<td>• Not very common due to security in place such as firewall</td>
</tr>
<tr>
<td></td>
<td>• And encryption will make reading the data even more difficult</td>
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<tr>
<td></td>
<td>• Use of non-dictionary passwords</td>
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<tr>
<td></td>
<td>• Regularly changing password</td>
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<tr>
<td></td>
<td>• Use of access rights to limit users</td>
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<tr>
<td>Deliberate sending of malware</td>
<td>• Ensure anti-software is kept up to date</td>
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<tr>
<td>Phishing</td>
<td>• Do not open unknown emails</td>
</tr>
<tr>
<td></td>
<td>• use filtering of emails</td>
</tr>
<tr>
<td>Pharming</td>
<td>• Advise users of the risk</td>
</tr>
<tr>
<td>Cyberbullying</td>
<td>• Prevented by education young people</td>
</tr>
<tr>
<td>Grooming</td>
<td>• Prevented by education young people</td>
</tr>
<tr>
<td>Spam</td>
<td>• Use of spam filters</td>
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</tbody>
</table>