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 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

<table>
<thead>
<tr>
<th>problem</th>
<th>prevention</th>
</tr>
</thead>
<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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<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>
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<tr>
<td></td>
<td>• use filtering of emails</td>
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<tr>
<td>Pharming</td>
<td>• Advise users of the risk</td>
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<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>