MARK SCHEME for the May/June 2012 question paper

for the guidance of teachers

9713 APPLIED INFORMATION AND COMMUNICATION TECHNOLOGY

9713/13   Paper 1 (Written A), 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.

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1   (a)   **Four** from:
Only ask for certain characters of password
Use drop down menus to select password
Description of TANs
Description of two factor authentication
Bank provides customers with up to date anti spyware   [4]

   (b)   **Three** from:
Save costs as don't have to rent so many high street premises
Employ fewer staff <u>therefore less paid in staff wages</u>.
Save costs of printing/sending statements
Lower running costs, fewer branches so less electricity, heating and lighting.
Because of lower costs can offer higher rates of interest for savers and lower rates
of interest for borrowers…
These rates attract more customers.
Less likelihood of the bank being robbed.
Less money is spent on security staff   [3]

   (c)   **Three** from:
Initially high redundancy payments
Initial cost of setting up system will be high
Running costs will be high due to paying website developers
<u>May lose customers</u> who prefer face to face banking/whose internet speed is too slow to be
viable/who may be worried about hacking
Harder to sell other services since there is a less personal service
Increased interception of data by hackers leading to fraud
Some staff will need to retrain which is costly/time consuming   [3]

   (d)   **Four** from:
Abiding by data protection rules
Workers must not share any customer data with anybody outside the organisation.
Workers should sign a confidentiality agreement
Employees should have a duty of fidelity
Information about an individual should not be passed from one organisation to another
without permission of the individual
Information should be anonymised where possible
Information should be aggregated where possible   [4]

2   (a)   **Matching pairs from**
Business advertising   [1]
Advertises the whole company to make the company name familiar not just a single product
or service.   [1]

   Or

Service Advertising   [1]
Advertising of a service plus example   [1]

(b) Four *descriptions* **from:**
Sound could be used in voiceovers/welcome from managing director
Soothing background music to create a comfortable feel to the website
Video of the bank workers/recordings of satisfied customers
Animation to demonstrate services
Hyperlinks to navigate between slides/link to company's website
Navigation button to navigate between slides/return to start [4]

(c) Three from:
It is on all the time that the mall, shop or store is open.
The viewer cannot switch it off with the remote control or click it off with a mouse button.
It is quicker and easier to update than most other forms of advertising
Reaches more people than directed advertising [3]

3 Six from:
CAL
Student can investigate ideas using the internet
Is not restricted by a computer program
Teachers have more varied teaching aids/can make use of multimedia in lessons
Can ask teacher to explain lesson points
Teacher can develop resources to suit their students
ICT resources can help students with special needs

CAI
Students find it easier to navigate between topics
Repetition of skills reinforces knowledge
Built in games and quizzes make experience enjoyable
Get immediate feedback on performance
Results are automatically recorded
Students can work at own pace

CAA
Teachers can use spreadsheets/databases to record test scores/produce graphs of progress
Easier to compare class/students performance
Tests can be computer-marked/Computers can provide feedback on tests saving teacher time
Saves teacher time/effort as they can use/produce computer based tests/can use ICT to assess
students' performance [6]

4 (a) Four from:
Speakers to hear output from presentation/websites
Overlay/Concept keyboard to select options
Scanner to input hard copy research materials
Printer to printout assignments/notes
Joystick to play games built in to CAI lessons
Video equipment to film practical activities as evidence for coursework portfolios [4]

(b) Four from:
Database to record student scores
Spreadsheet to store data/to plot student progress charts
Web browser to look up resources for worksheets
Word processing software to produce worksheets/type up reports/prepare lessons
Presentation software to produce lesson slideshows [4]

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5 **Five** from:
Screenshots / descriptions of how to use the software to show how to save a file, perform a search, sort data, print data, add records, delete records and edit records
The purpose of the system to give an overall description of what the system does
The input and output formats so that you know how to enter data and know what the output will look like
The hardware and software needed to run the system so that the user doesn't use the wrong hardware/software
Examples of sample runs of the system so that the user can tell if they are using the system in the correct way.
Troubleshooting guide/a list of Frequently Asked Questions to know what to do when errors occur
[5]

6 **(i)** Between the condensing unit and the valve [1]

   (ii) **Five** from:
   the system controls the amount of heat being let out of the system.
   The valve is controlled by microprocessor to reduce/increase the flow of refrigerant
   Microprocessor compares the pressure of the refrigerant to the preset value
   If pressure of refrigerant is above preset value microprocessor opens valve wider
   If pressure of refrigerant is below preset value microprocessor makes valve opening narrower
   The required temperature is input
   Microprocessor compares the temperature of the room to the preset value
   If temperature of the room is above the pre-set value the fans remain on/are switched on by the microprocessor or microprocessor increases their speed
   If temperature of the room is below the pre-set value the fans remain/switched off by the microprocessor [5]

7 **(a)** Kerning is the process of adjusting the space between individual letters in words [1]
   Leading is the space between lines on a page [1]

   (b) **Three** from:
   They need to be compatible with the size/type of font in the headings/headlines
   Font type needs to be easy to read
   Font size needs to be small enough for stories to fit on a page
   Font size needs to be large enough to read [3]

8 **Four** from:
Time is not wasted travelling/ more free time because of less travelling
Can spend more time with their family/can arrange their work schedule to suit themselves
Don't have to live close to the company so can live in area of their choice
Don't have to spend money on fuel/transport travelling to work
Don't have the stress of travelling to work in rush hour
If the journalist is disabled it's easier for him/her as he/she doesn't have to travel [4]

9 **(a)** **Two** from:
   an employee earning an unusually large amount of money
   an employee who has been on an emergency tax code for a long period of time
   two employees having the same National Insurance number [2]

(b) Six from:
information about all employees of the company
information about employees in a given department
information about the salaries of all employees
total salaries of all employees
National Insurance contributions for all employees
the total amount of National Insurance contributions paid to the tax authorities
the income tax that each employee has paid
the total amount of income tax paid to the tax authorities
the amount of money paid to each bank that employees have an account with
all the earnings and deductions of employees
the earnings and deductions of each employee by department
a summary of all the totals of the earnings/deductions of each department.   [6]

10   Four matched pairs from:
Interview employees/manager with description of how or what information is gathered
Employees/manager have to be available at the time the analyst wants to interview them/time consuming as can only interview one user at a time/may get answers which the user thinks the analyst wants to hear

Examining documents used in current system with description of what information is gathered
May not be able to take user's opinions into account/takes a long time to collate all the documents

Observing employees and watching over the whole process with description of how or what information is gathered
Description of Hawthorne effect

Distributing questionnaires to employees with description of how or what information is gathered
They are impersonal and can be anonymous so workers might exaggerate their answers as they know there is no comeback/questions cannot be amended in the light of replies   [8]

11 (a) Sequential – activities which cannot take place until others have happened.
Example – design of new system cannot take place until after the analysis of the existing system is completed
Parallel – activities which are independent of one another
Examples such as interviewing personnel and completing questionnaires/producing user documentation and technical documentation   [4]

(b) Gantt charts   [1]

(c) Two from:
Finding the optimum time to be spent on individual tasks.
Critical path is the order in which tasks must be completed….
…so that the entire project is completed on time.   [2]