MARK SCHEME for the May/June 2014 series

9713 APPLIED INFORMATION & 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.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the May/June 2014 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

1 (a) Product   **[1]**

Two from:
Advertising a <u>specific</u> product
Advertising one item such as a specific model of a car
Not the whole range of cars the company sells/not the company itself
Target audience is identified…
… and an advertising campaign that will appeal to that type of audience is created
Media is decided upon   **[2]**

(b) Four from:
Statistical tables and graphs showing company sales/profits/progress could be created using spreadsheet software
Files of data/reports of sales/profits/progress could be created using database software
Images of the company could be scanned using scanning software
Images/photos of company personnel/head office buildings/latest model could be edited by picture/photo editing software/graphics software
Voiceovers describing products or introducing the company/background music could be edited by music/audio editing software
Videos of company personnel/head office buildings/latest model could be edited by video editing software
Slides with information introducing the new model could be produced using presentation software   **[4]**

(c) Three from:
Discontented consumer may avoid that organisation in future
Many computer users now have pop-up blocking software
Many users just close the pop up without reading it/ignore it
Pop ups are considered to be a hindrance/distraction/annoyance   **[3]**

(d) Three from:
Customers don't instantly remove them
Don't appear to users until they close a window so less likely to remove them/ Don't appear to users until they close a window so more likely to read them
They are not removed by pop-up blocking
Consumer regards pop-unders as less of a hindrance than pop-ups   **[3]**

(e) Four from:
Can make their own website better suited to their needs
Own website will target their audience better
Own website has shorter delay in updating/improving advertising/easier to update/improve
Company doesn't have as much control over the host's website as it would over its own
May be many other companies' advertising on someone else's website
The company's entry may not be seen/someone else's website might not be popular
Not as much advertising can be used/limited space available   **[4]**

2 (a) Four from:

If the website designer is disabled it's easier for him/her as he/she doesn't have to travel
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 **[4]**

(b) Three from:

More likely to retain staff so don't have to spend money on retraining
Don't have to pay travelling expenses for conferences
Less need for land for car parking space so some land could be sold off
Any other reasonable description of lower costs **[3]**

3 (a) Five from:

Patients condition is monitored using computer and sensors
Sensors used to monitor blood pressure, pulse rate, body temperature (must mention at least two)
Sensors feed back body functions to the microprocessor/computer
Values are converted from analogue to digital
Computer is pre-set with the normal range of values
Computer is (constantly) comparing the data fed back by the sensors…
…..to these pre-set values
If any data is outside the pre-set range the computer sends a signal to sound an alarm
The process is continuous **[5]**

(b) Four from:

Can monitor continuously/readings can be taken more frequently
Nurses can get tired and forget to take readings/nurses are so busy they might not be able to take readings regularly
Computer readings are more accurate than nurses/human errors are reduced
More than one variable can be measured at any one time
Results can be analysed automatically/Charts are produced automatically
Automatic warnings can be generated/computers are faster to react
A computer can monitor the condition of several patients at the same time leaving nurses free to do other tasks
Reduces chances of nurses being exposed to contagious diseases
Reduced cost of wage bill/fewer nurses will be needed **[4]**

4 Five from:

Office staff have a duty of confidence to patients and hospital
They must not tell anybody about the details of patients records without the patient's/hospital's permission
Patient's could take out a legal injunction if office staff attempt to give out their information without their permission
Office staff will have been told to treat the information as confidential
Or it must be obvious to them that the information has been given/obtained in confidence
Best way to achieve confidentiality is for hospital to get office staff to sign a confidentiality agreement. **[5]**

5 **Three** from:
Fax machine is connected to a phone line
Has a number pad which allows pharmacy's fax machine number to be dialled
Has an inbuilt scanner to scan hard copy faxes/scan the order…
… which is transmitted through phone lines
Pharmacy's fax machine has an inbuilt printer which allows the order to be printed **[3]**

6 **(a)** **Three** from:
Tax history
National Insurance history
Pay so far this year
Pension contributions
Rate of pay
Tax code
Bank details
Payment method **[3]**

(b) **Two from:**
ID/Workers Number
Hours worked **[2]**

(c) **Three** from:
Data is collected together in a transaction file
In the course of the week
It is processed in one go with the master file
To produce payslips (usually overnight)
Without human intervention **[3]**

(d) **Two** from:
For large systems the hardware required for batch processing can be cheaper than that in an on-line system
Batch processing can be carried out at a time when the computer would not normally be used
A company can get more work out of the computer hardware it owns
Batch processing moves the time of processing to when the computing resources are less busy
Batch processing requires less human supervision **[2]**

(e) **Five** from:
At the end of each week…
…transaction file is sorted into same order as master file
Sorted on employee number
First record in the transaction file is read
First record in the old master file is read
Computer calculates the pay
Using rate of pay from master file
Using hours worked from transaction file
Computer calculates the income tax/insurance/pension contributions
Computer subtracts these from total pay
Processed record is written to new master file
Process is repeated until end of old master file
Master file is updated
Payslips are printed **[5]**

(f) **Three** from:
Financial reports describe financial information about employees
Financial reports detail information by department or all employees
Financial reports detail payments made to employees
Financial reports detail amounts deducted from employees
Exception reports are usually reports about errors produced by the system usually as a result of validation rules having been broken
Exception reports usually refer to individual employees

Must have at least one feature of each to gain full marks **[3]**

7 **Three names and descriptions** from:
Part time working
Working a limited number of hours/working less than the normal working hours of a full time employee

Flexible working hours
Workers choose the time of day they want to work (but work the same number of hours every week)

Job sharing
Two (or more) workers doing the job of one worker (working full time)

Compressed hours
Working for same number of hours as a normal working week but over fewer days **[6]**

8 **(a)** **Three** from:
They can employ fewer staff and pay less in staff wages
Don't have to pay as much in running costs such as electricity, heating/air conditioning and lighting at call centres
Because of their lower costs, they can offer cheaper goods thus attracting more customers
Shoppers can shop 24/7 so company could gain increased profits
Internet more likely to attract customers worldwide increasing profits **[3]**

(b) Three from:
Security concerns about data transmitted over internet such as hacking, phishing, pharming, spyware, viruses, malware
Description of phishing
Description of pharming
Can order goods and they don't get delivered
Goods are not to the same standard as those ordered
Can't check the standard of goods before buying
May be hidden costs such as delivery charges
Description of viruses
<u>Expense</u> of buying a computer with a broadband internet connection [3]

9 (a) Three from:
Establishing the inputs, outputs and processing in the current/existing system
Recording information about the current/existing system
Identifying problems with the current/existing system
Identifying suitable hardware and software for a new system
Identifying the user and information requirements [3]

(b) Three matched pairs from:
Invalid character check which would check that only digits have been entered
Example – any sequence of non-numeric data

Check digit – produced by performing calculation on the ten digits
Example – transposing any two digits

Length check which would check that length is exactly ten characters
Example any string fewer or more than ten characters

Range check which would check that id is >999999999 and less than 10000000000
Example any number >999999999 or less than 10000000000

Format/picture check on student number so that all 10 characters are numeric
Example 10 characters containing one or more non-numeric characters [6]