

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**  
GCE Advanced Subsidiary Level and GCE Advanced Level

**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.

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<b>Page 2</b>	<b>Mark Scheme</b>	<b>Syllabus</b>	<b>Paper</b>
	<b>GCE AS/A LEVEL – May/June 2014</b>	<b>9713</b>	<b>13</b>

1 (a) Product [1]

**Two** from:

Advertising a specific 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-uppers 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]

Page 3	Mark Scheme	Syllabus	Paper
	GCE AS/A LEVEL – May/June 2014	9713	13

- 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]

Page 4	Mark Scheme	Syllabus	Paper
	GCE AS/A LEVEL – May/June 2014	9713	13

- 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]

<b>Page 5</b>	<b>Mark Scheme</b>	<b>Syllabus</b>	<b>Paper</b>
	<b>GCE AS/A LEVEL – May/June 2014</b>	<b>9713</b>	<b>13</b>

**(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>Page 6</b>	<b>Mark Scheme</b>	<b>Syllabus</b>	<b>Paper</b>
	<b>GCE AS/A LEVEL – May/June 2014</b>	<b>9713</b>	<b>13</b>

**(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
  - Expense 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]**