

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**

**Cambridge International Advanced Subsidiary and Advanced Level**

**MARK SCHEME for the October/November 2014 series**

**9713 APPLIED INFORMATION AND  
COMMUNICATION TECHNOLOGY**

**9713/13**

Paper 1 (Written A), maximum raw mark 80

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1 (a)

It is the cheapest method of implementation	
If there is a fault with the new system the old system can still be used	✓
It is the fastest method of implementation	
You need two sets of workers	

[1]

(b)

If there is a fault with the new system the old system can still be used	
There is no need to train the workers	
The benefits of the new system are available immediately	✓
The new system does not require any documentation	

[1]

(c)

If there is a fault with the new system not all stores in the organisation would be affected	✓
If there is a fault with the new system none of the stores in the organisation would be affected	
It is a quicker method of implementation than direct changeover	
It is a cheaper method than direct changeover	

[1]

2

To provide the systems analyst with a detailed overview of the whole system	✓
So that user documentation does not have to be produced	
So that cashiers can troubleshoot simple problems	
To make sure the developed system matches the design	
So that the system can be evaluated	
To help when the system needs amending to eliminate errors	✓
So that programmers can fully understand the program code that has been used	✓
So that users can fully understand the system	
To help cashiers operate the POS terminals	
To refer to when the system needs further development or upgrading	✓

[4]

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**3 Three** matched pairs from:

Test data

This column would contain test data values such as 40 and 20/description of test data

Expected results

This column would contain the calculation  $20 + 40 = 60$ /description of expected results

Actual results

This column would contain the actual results of the test, in this case 60/description of actual results

Comment

This column would contain whether the test worked, in this case whether 60 was produced or not/description of a comment

*Accept other column headings if feasible*

**[6]**

**4 (a)** Matched pairs

Amendment

A customer's address/name is changed/customer buys something

**[1]**

**+ [1]**

Deletion

A customer closes their account/dies

**[1]**

**+ [1]**

Insertion

A new customer opens an account

**[1]**

**+ [1]**

**(b) Six** from:

Magnetic disc has faster access than magnetic tape to data for reading from a file

Magnetic disc has faster access than magnetic tape to data for writing to a file

Fixed magnetic disc is not as portable as a magnetic tape, so not as effective for transaction file...

...if this is to be prepared off line

Data on a magnetic disc has direct access...

...so useful if data from master file is required quickly

Data on a magnetic tape requires serial access...

...but as all the data on the transaction file will be used this is not an issue

One mark is available for a reasoned conclusion

**[6]**

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**5 (a) Five from:**

The relational database consists of two tables  
 A customer records table and a sales records table  
 The tables are linked to each other...  
 ...using a key field  
 ...for example the customer ID  
 This field is part of other table(s)  
 Data from one table combined with data from other table(s) when producing reports  
 Can select different fields from each table for output  
 SQL is used for queries and producing reports

**[5]**

**(b) Three from:**

Data is not repeated  
 Less storage capacity needed  
 Easier to expand the database  
 Data only needs to be amended once  
 Easier to produce reports with cross-tabular data  
 Data integrity is maintained  
 Hackers would find it more difficult to access data than if they were separate flat files

**[3]**

**6 (a) Two matched points from:**

Visual verification  
 Visually compare data on screen/printout with original/source document  
 Decide which version is correct if differences are spotted

Double data entry  
 Two people type in data/one person types in data twice  
 Computer compares two versions  
 Keyboard freezes/sound made/data flagged if differences occur  
 Decide which version is correct if differences are spotted

**[4]**

**(b) Three from:**

Verification checks that data is copied correctly from one medium to another  
 Verification checks that versions of data have been entered correctly  
 Verification does not check if data is correct or reasonable  
 Validation is used to check entered data is reasonable/acceptable

**[3]**

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**7 (a) Four from:**

Camera – to inspect work

Welding gun – to weld parts of the car body together

Vacuum cup – to pick up parts of the body

Spray gun- to paint the car body

**[4]**

**(b) Four from:**

A robot arm has greater accuracy/fewer errors than a human

There are lower running costs/no need to pay robots wages/lower utility costs

Work/work rate is of a consistent standard

The whole process can be continuous/24 hours a day 7 days a week...

...without having to stop at shift changeovers

It is a safer/less dangerous environment for humans/robots can work in harsh/hazardous conditions

Greater productivity

**[4]**

**8 (a) Three descriptions and three examples from:**

*Business* – Advertises the whole company to make the company name familiar not just a single product or service

Example – advertising the WIMBA car company as a whole

*Product* – Advertising a specific/single product

Example – The new model of car

*Service* – Advertising of a service such as banking, insurance, education/a service the company provides (for its customers)

Example – car insurance

**[6]**

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(b) **Four descriptions** from:

Sound could be used in voiceovers/welcome from managing director  
 Soothing background music to create a comfortable feel for customers  
 Video of the car being manufactured/recordings of satisfied customers  
 Animation to demonstrate insurance services/animated 3D logo of the company  
 Hyperlinks to navigate between slides of different aspects of the company or cars/link to company's website  
 Navigation button to navigate between slides of different cars/different aspects of the company

[4]

9 **Three** from:

Descriptions of:

Organising meeting times  
 Arranging workloads  
 Organising research and development projects  
 Project management

[3]

10 (a) **Two** from:

Involves working the same number of hours as normal  
 Over a shorter number of days  
 Usually involves working 4½ days in a week/9 days out of 10 in a period of two weeks

[2]

(b) **Two** from:

Can be very tired after working long hours  
 Have to get up earlier/work later most days  
 Spend less time with family on working days  
 Less leisure time on working days

[2]

(c) **Two** from:

Difficult to arrange training/meeting times/working hours to suit all workers  
 Utilities may be more expensive as advertising department is working longer hours  
 Work needs to be carried out over the whole week but the employee is not always there

[2]

11 (a) **Four** from:

Do not overload sockets  
 Only allow qualified electricians to install electrical equipment  
 Equipment should be checked regularly  
 Cabling should be tied up/trunked  
 Electrical equipment must be located away from water supplies  
 Do not take drinks near electrical equipment  
 Have several carbon dioxide fire extinguishers  
 Benching/work desks should be sturdy enough to take the weight of heavy equipment/do not allow heavy equipment to overhang

[4]

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(b) Four matched pairs from:

*Measure*

Get up and walk around every so often

Good quality seating that supports the back/sitting in an appropriate position

Height-adjustable seating

Focus on a distant object from time to time/improve the lighting in the room/have anti-glare screens

Use ergonomic/ergonomic keyboards

Height, position and distance from worker of screens/keyboards should be optimised

*Health problem*

Lower back pain

Problems with one's sight

RSI in the fingers

RSI in the wrists/carpal tunnel syndrome

Eye strain/headaches

Upper back/neck/shoulder pain/eyestrain/headaches

[4]

(c) Five from:

Interactive voice response (IVR) software deals with initial request

IVR provides options to customer

IVR provides automated services

If necessary phone call is directed to (appropriate operator)

Call can be queued

Caller's number is displayed to operator

Customer records, if available, displayed to operator

[5]