

CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International Advanced Subsidiary and Advanced Level

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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]

Page 3	Mark Scheme	System Paper
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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 [1]
A customer's address/name is changed/customer buys something +[1]

Deletion [1]
A customer closes their account/dies +[1]

Insertion [1]
A new customer opens an account +[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]

Page 4	Mark Scheme	System Paper
	Cambridge International AS/A Level – October/November 2014	971

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]

Page 5	Mark Scheme	Syllabus
	Cambridge International AS/A Level – October/November 2014	9710

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]

Page 6	Mark Scheme	Syllabus	Paper
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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]

Page 7	Mark Scheme	Syllabus
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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]