



Cambridge International Examinations
Cambridge International Advanced Subsidiary and Advanced Level

CANDIDATE NAME

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APPLIED INFORMATION AND COMMUNICATION TECHNOLOGY

9713/12

Paper 1

May/June 2014

1 hour 15 minutes

Candidates answer on the Question Paper.

No additional materials are required.

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.

Write in dark blue or black pen.

Do not use staples, paper clips, glue or correction fluid.

You may use an HB pencil for any diagrams, graphs or rough working.

DO NOT WRITE IN ANY BARCODES.

Answer **all** questions.

The number of marks is given in brackets [] at the end of each question or part question.

The businesses described in this paper are entirely fictitious.

This document consists of **18** printed pages and **2** blank pages.

Scenario 1

Question 1, 2, 3 and 4

Dubai Airways (DA) is a company which carries passengers from all parts of the world to Dubai.

DA's computer system needs updating.

It issues e-tickets which have a bar code and the flight details.

After flights, DA invites each passenger to complete a form giving their opinions about the flight. As part of the system update DA have asked the systems analyst, Li, to design a new form. The company is undecided whether the data on the form should be captured using Optical Character Recognition (OCR) or Optical Mark Recognition (OMR).

As Li develops the new system, she will supervise the testing.

The new system will be evaluated after testing is completed.

Li will provide DA with documentation about the system.

- 1 Validation is used to check that data input into DA's system is reasonable. For each statement below, tick the **most appropriate** answer.

(a) The **most appropriate** use of a check digit would be to ensure the validity of:

	✓
Number of passengers	
A bar code number	
A flight number (consisting of two letters followed by three digits)	
Name of destination	

[1]

(b) The **most appropriate** use of a format check would be to ensure the validity of:

	✓
Number of passengers	
A bar code number	
A flight number (consisting of two letters followed by three digits)	
Name of destination	

[1]

(c) The **most appropriate** use of a range check would be to ensure the validity of:

	✓
Number of passengers	
A bar code number	
A flight number (consisting of two letters followed by three digits)	
Name of destination	

[1]

2 Tick the **four** statements which are true when referring to the testing of DA's new system.

	True ✓
Live data is test data that has never been used before	
Abnormal data would be 500 passengers on a flight with 300 seats	
Live data is test data for which the results are already known	
Extreme data would be 300 passengers on a flight with 300 seats	
Extreme data is data of the wrong data type for the field concerned	
Normal data is data that is within a given range	
Abnormal data is data of the correct type for the field concerned	
All data that is not abnormal is extreme	
Testing will not indicate where improvements can be made	
Modules are never adjusted as a result of testing	

[4]

3 (a) After the system has been tested Li will need to produce an evaluation. Describe **three** stages involved in the evaluation of such a system.

Stage 1

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.....

Stage 2

.....

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Stage 3

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..... [3]

(b) Name **two** types of **technical** documentation and for each one describe **two** examples of its contents.

Type of documentation 1:

Content 1:

.....

Content 2:

.....

Type of documentation 2:

Content 1:

.....

Content 2:

..... [6]

4 (a) Identify **three** different features of a well-designed **paper based** form that will make it easier for a passenger to fill in. For each feature, state whether OMR or OCR would be the most appropriate method of input to a computer.

1

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2

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3

..... [3]

(b) Discuss the advantages and disadvantages of OMR compared with OCR.

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..... [5]

Scenario 2
Questions 5, 6 and 7

Midtown Bank in the UK operates an online banking service. A number of customers are concerned about the privacy and security of their data.

This system means that bank employees have access to the personal details of customers of the bank. There are social and ethical implications which can arise because of this.

As the number of customers using their online banking service has increased, there are fewer customers visiting local branches. This has led to some of the branches closing.

5 (a) Describe the following security issues associated with online banking.

Phishing

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..... [2]

Pharming

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..... [2]

Spyware

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..... [2]

(b) Apart from security issues, describe **three** drawbacks to customers of using online banking.

1

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2

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3

..... [3]

(c) Describe **three** benefits to the bank of online banking.

1

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2

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3

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..... [3]

- 6 (a) Anonymised and aggregated information are two ways customer information can be summarised to safeguard its confidentiality.

Describe what is meant by the two terms:

Anonymised information

.....

.....

Aggregated information

.....

..... [2]

- (b) Describe **two** ways that aggregated information would be useful to the bank.

1

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2

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..... [2]

- (c) Apart from the need to use anonymised and aggregated information explain the responsibilities of the bank when safeguarding the privacy of customers' data.

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7 As bank branches have closed, changes in working patterns have occurred as well as changes in employment status. Describe **three** of the changes to working patterns.

1

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2

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3

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..... [3]

Scenario 3
Question 8

Mrs Sharif is the head teacher of a large school with over 2000 students.

Teachers keep records of test scores on the school's computer system. The total possible mark for each test varies from test to test and subject to subject.

Mrs Sharif wants the teachers to use the test scores of each student so that they can be included in a report to the student's parents. She will need to choose a suitable printer for printing the reports.

8 (a) Give **four** features of spreadsheet software which would be used by a teacher to **analyse** the test results of the students and for each feature give a use for it.

Feature 1

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Use 1

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Feature 2

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Use 2

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Feature 3

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Use 3

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Feature 4

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Use 4

..... [8]

(b) Give **three** advantages to a teacher of using spreadsheets rather than manually analysing test results.

1

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2

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3

..... [3]

(c) Describe **three** features of word processing software that you could use to include the analysed data in the typed reports.

1

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2

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3

..... [3]

(d) Mrs Sharif wants to use a laser printer to print the reports. Give **two** reasons why she has chosen a laser printer rather than other types of printer.

1

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2

..... [2]

Scenario 4
Questions 9, 10 and 11

RockICT has a computerised payroll system. Sequential files are used for the master and transaction files.

Workers are paid on a weekly basis depending on how many hours they work. Batch processing is used to run the payroll.

Because the system is computerised the payroll office workers are allowed to work from home.

9 (a) Give **three** reasons why the company would want their payroll workers to work at home rather than in the office.

1

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2

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3

..... [3]

(b) Describe **three** reasons why the payroll workers would want to work at home rather than in the office.

1

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2

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3

..... [3]

10 (a) Describe what is meant by an unordered sequential file.

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..... [1]

(b) Describe what is meant by batch processing,

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..... [3]

11 Describe **six** steps in the weekly updating of the payroll master file.

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2

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3

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4

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6

..... [6]

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