



**Cambridge International Examinations**  
Cambridge International Advanced Level

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**APPLIED INFORMATION AND COMMUNICATION TECHNOLOGY**

**9713/12**

Paper 1

**October/November 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 a 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 **15** printed pages and **1** blank page.

**Scenario 1****Questions 1, 2, 3, 4, 5, 6 and 7**

White Nile Foods in Cairo manufactures pre-packed meals.

- The ingredients of the meals are mixed in a large-scale food mixer.
- The mixture is then moved to the production line where individual containers are filled and a lid and label are placed on each container.
- The containers are then moved to the refrigeration plant for storage prior to transportation.

A systems analyst has been hired to investigate the current system with a view to designing a new computerised system.

Part of the design of a new system involves specifying the required hardware and software.

At 15 second intervals the current status of the system, including the temperature of the mixture, will be output to a printer.

If they go ahead with computerising the process, in order to keep the same number of workers employed, many workers will have to work part-time.

The company would like to use ICT to produce advertising materials to publicise its new range of products.

- 1 Three methods of researching the current system would be the use of questionnaires, interviews and observations. For each statement below, tick the **most appropriate** answer.

(a) A drawback of using a questionnaire would be:

	✓
Responses can be machine readable	
As the questionnaires would be anonymous, system users might exaggerate their responses	
Users can take them away and complete them in their own time	
It is quicker to collate data	

[1]

(b) A drawback of using interviews would be:

	✓
System users might not answer honestly and give the answers they think the interviewer wants to hear	
Questions can be tailored to suit the individual	
Supplementary questions can be asked	
It is possible to make sure that all users' opinions are collected	

[1]

(c) A drawback of using observations would be:

	✓
You can see the system first hand	
The observer will get a good overall view of the process	
System users might behave differently if they know they are being watched	
Users do not have to spend time away from work	

[1]

- 2 Tick **four** ways in which the inputs, outputs and processing in the existing system would be established by the systems analyst.

	✓
Identify who the manager is	
Identify the sources and volume of input data and collection methods	
Identify the input documents currently in use	
Determine how much each worker is paid	
Determine the frequency of the addition and deletion of records	
Identify the colours used in the company logo	
Identify the manual and computer procedures necessary to achieve the current output	
Identify how many workers there are	
Identify the manufacturer of the packaging	
Determine the location of the food mixer	

[4]

3 (a) Describe what is meant by the following terms when referring to Data Flow Diagrams.

Store .....  
.....  
Process box .....  
.....  
Data flow arrow .....  
.....  
Terminator .....  
.....[4]

(b) Give **three** reasons why the systems analyst would use Data Flow Diagrams.

1 .....  
.....  
2 .....  
.....  
3 .....  
.....[3]

4 (a) For each of the following examples describe the type of process control which would be used, giving a reason why.

Mixing ingredients .....  
.....  
.....  
.....[2]

Production line .....  
.....  
.....  
.....[2]

Refrigeration .....  
.....  
.....  
.....[2]

(b) Discuss the benefits and drawbacks to the company of using computerised process control.

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....[6]



6 (a) Describe what is meant by working part time.

.....  
.....  
.....  
.....[2]

(b) Describe **two** benefits to the workers of working part time.

1 .....  
.....  
2 .....  
.....[2]

(c) Describe **two** drawbacks to the workers of working part time.

1 .....  
.....  
2 .....  
.....[2]



7 (a) Describe **three** advantages to the company of using posters rather than flyers in this scenario.

- 1 .....
- .....
- .....
- 2 .....
- .....
- .....
- 3 .....
- .....
- .....

[3]

(b) Give **four** reasons why the company would advertise using flyers rather than using posters in this scenario.

- 1 .....
- .....
- .....
- 2 .....
- .....
- .....
- 3 .....
- .....
- .....
- 4 .....
- .....
- .....

[4]

**Scenario 2****Questions 8, 9, 10 and 11**

Volcano Ltd is a book publishing company which has several offices throughout Sweden.

In Stockholm the office has a number of departments. The manager of the Humanities department, Johanna, often works from home. During the winter months she uses a microprocessor controlled central heating system. The company pay all her expenses for her heating, lighting and equipment costs.

The offices use video-conferencing for training purposes as required.

The company also sells books using their own online shopping website.

8 Describe the inputs and outputs of a microprocessor controlled central heating system.

Inputs

.....  
.....  
.....  
.....[2]

Outputs

.....  
.....  
.....  
.....[2]

9 (a) Apart from distractions at home, give **four** reasons why the company would want Johanna to work in the office rather than at home.

1 .....  
.....  
2 .....  
.....  
3 .....  
.....  
4 .....  
.....[4]

(b) Give **two** possible distractions to Johanna which might interrupt her work at home.

1 .....  
.....  
2 .....  
.....[2]



11 (a) A customer has loaded the website of the online shopping system. Describe **five** steps she would have to go through in order to select an item before she pays for it.

- 1 .....
- .....
- 2 .....
- .....
- 3 .....
- .....
- 4 .....
- .....
- 5 .....
- .....[5]

(b) Some customers have to use online shopping systems. Give **four** circumstances where this is the case.

- 1 .....
- .....
- 2 .....
- .....
- 3 .....
- .....
- 4 .....
- .....[4]

(c) Describe **four** reasons why some customers may be unable to use online shopping.

- 1 .....
- .....
- 2 .....
- .....
- 3 .....
- .....
- 4 .....
- .....[4]

**Scenario 3**  
**Question 12**

China News is a newspaper produced in Beijing. The owners have printing presses in a number of other Chinese cities.

After journalists type up their stories they submit them to the editor including the photographs they have used.

After the newspaper layout is completed, satellites are used to send it for printing.

12 (a) Describe **four** ICT techniques that the editor would use to produce the newspaper layout after receiving the journalists' stories and photographs.

1 .....

.....

2 .....

.....

3 .....

.....

4 .....

.....[4]

(b) Describe how satellites are used when faxing a completed page from the main office to the printing presses in other parts of China.

.....

.....

.....

.....

.....[3]

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