



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
 General Certificate of Education  
 Advanced Subsidiary Level and Advanced Level

CANDIDATE  
 NAME

CENTRE  
 NUMBER

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CANDIDATE  
 NUMBER

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**COMPUTING**

**9691/11**

Paper 1

**October/November 2013**

**1 hour 30 minutes**

Candidates answer on the Question Paper.

No additional materials are required.

No calculators allowed.

**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.

You may use a soft pencil for any diagrams, graphs or rough working.

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

**DO NOT WRITE IN ANY BARCODES.**

Answer **all** questions.

No marks will be awarded for using brand names for software packages or hardware.

At the end of the examination, fasten all your work securely together.

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

This document consists of **16** printed pages.



1 An airport wishes to update its computer facilities to improve its service to passengers.

A systems analyst has been asked to help with the process.

Name and describe **two** methods of fact finding the systems analyst could use. Explain how each would be carried out in this case.

Method 1 .....

.....

.....

.....

.....

Method 2 .....

.....

.....

.....

..... [4]

For  
Examiner's  
Use



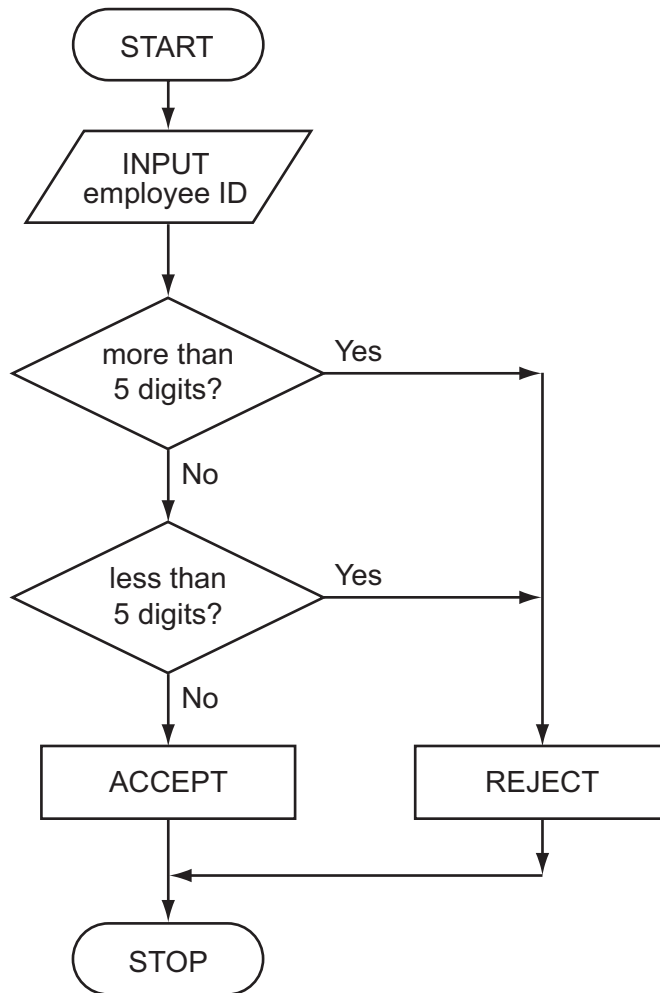
3 (a) Describe the difference between *verification* and *validation* of data.

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

(b) Two different validation checks are described using each of the following flowcharts.

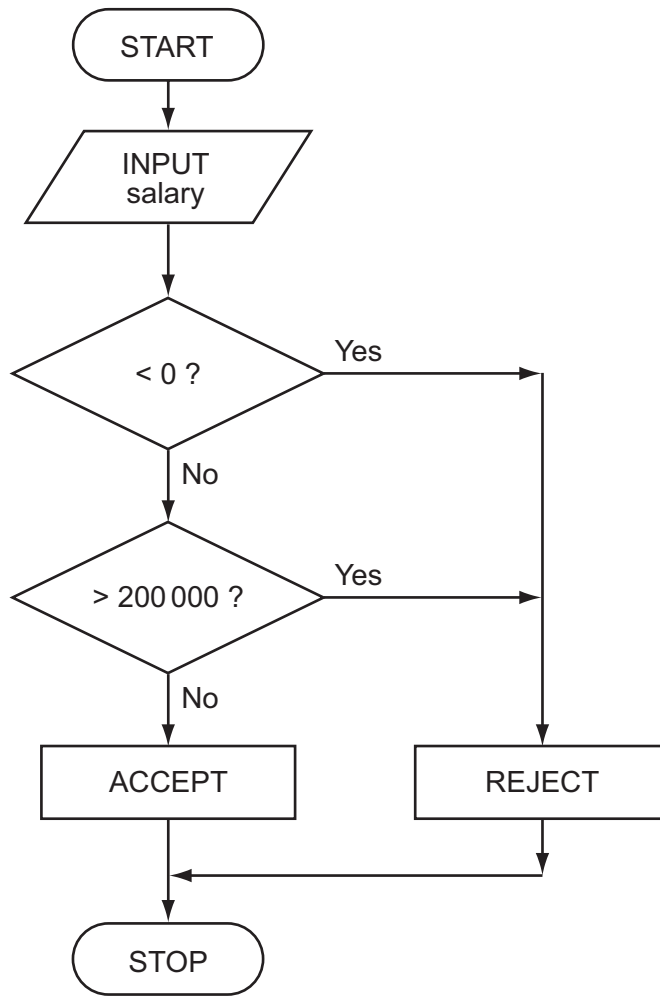
Name the types of validation check.

(i)



Type of validation check ..... [1]

(ii)



Type of validation check ..... [1]

- (c) Check digits are another validation method. The *modulo-11* method multiplies each digit by its digit position, adds the totals together and divides the result by eleven. The remainder is the check digit.

Note: the check digit is digit position 1.

- (i) Calculate the check digit ( ) for the following number:

3 0 4 5 \_

Show your working.

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

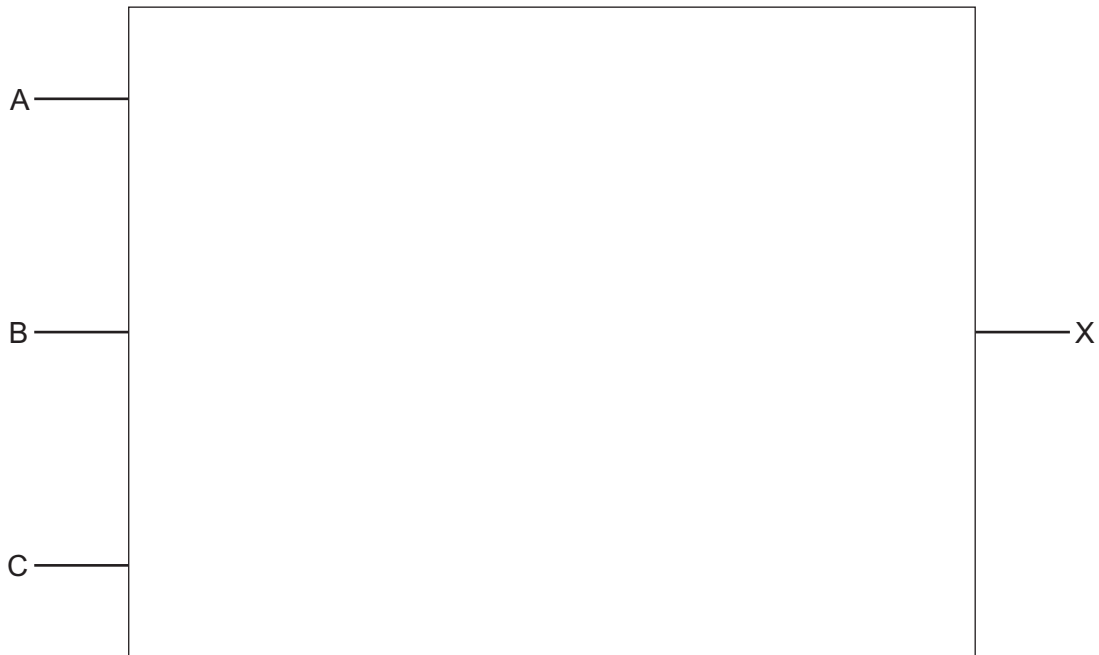
- (ii) The employee ID **39421** was entered into the computer as **34921**.

Explain how the check digit validation check will flag **34921** as an invalid employee ID.

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

- 4 (a) Draw the logic circuit that directly corresponds to the following logic statement:

$X = 1$  IF (A is NOT 1 OR B is 1) AND (B is 1 OR C is 1)



[4]

- (b) Complete the truth table for the above logic statement.

A	B	C	Working space	X
0	0	0		
0	0	1		
0	1	0		
0	1	1		
1	0	0		
1	0	1		
1	1	0		
1	1	1		

[4]

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5 (a) What is meant by an interrupt?

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

(b) A user starts the printing of a document, and then carries on editing a second document while printing continues.

Explain how interrupts make this possible.

.....  
.....  
.....  
.....  
.....  
.....  
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.....  
.....  
.....  
..... [4]

(c) Once a week the user runs a virus checker.

What action will be taken if the virus checker detects a virus in a file?

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



(d) The computer is running a single-user operating system.

Describe what this means.

.....

.....

.....

..... [2]

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6 (a) Describe the main differences between RAM and ROM.

.....  
.....  
.....  
.....  
.....  
.....  
..... [3]

(b) Data logging devices contain both RAM and ROM.

Describe the role of each type of memory in these devices.

RAM .....

.....

.....

ROM .....

.....

..... [2]



7 (a) Describe **one** benefit and **one** drawback of using each of the following network topologies:

**Bus**

Benefit .....

.....

.....

Drawback .....

.....

.....

**Star**

Benefit .....

.....

.....

Drawback .....

.....

.....

**Ring**

Benefit .....

.....

.....

Drawback .....

.....

.....

[6]

(b) Discuss the different types of hardware needed to operate a local area network (LAN) and a wide area network (WAN).

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LAN .....

.....

.....

.....

.....

WAN .....

.....

.....

.....

.....

[3]

8 A finance company wish to use spreadsheets to monitor, control and predict costs.

(a) What features of spreadsheet software make them suitable for these tasks?

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.....  
.....  
.....  
..... [3]

(b) The company are considering buying a custom-written accountancy package.

Describe the relative advantages and disadvantages of using custom-written accountancy software rather than off-the-shelf accountancy software.

Advantages .....

.....  
.....  
.....  
.....

Disadvantages .....

.....  
.....  
..... [4]

(c) Identify **two** applications where generic applications software is not appropriate.

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1 .....

.....

.....

.....

2 .....

.....

.....

..... [2]

9 (a) What is an expert system?

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

(b) An expert system was developed to identify faults (and suggest solutions) in television sets.

Describe how the expert system is used to identify faults by considering the inputs, processing and outputs.

Inputs .....

.....  
.....  
.....

Processing .....

.....  
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.....  
.....  
.....  
.....  
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.....  
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Outputs .....

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..... [7]

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