UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

COMPUTER STUDIES **7010/31**

Paper 3 Alternative to Coursework **May/June 2011**

1 hour 30 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.
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.

There is one compulsory question on this paper.

Each part must be answered in the space provided.

You are advised to spend at least 20 minutes reading the information at the start of question 1 since this information is needed to answer all the sections in this question.

The maximum number of marks is 60.

For Examiner's Use

This document consists of **10** printed pages and **2** blank pages.

For Examiner's Use

1 In this question you are asked to read about:

- an existing manual, paper-based stock control system used in a bathroom fittings retailer,
- the computer-based semi-automatic stock control system that is intended to be introduced as a replacement.

You are given a description of both the existing and the intended new computerised scheme.

Description of the existing system

When a customer comes into the retailer to buy a bathroom fitting, the salesman asks the filing clerk to go to the filing cabinet where she would be able to locate the appropriate files containing all the necessary details. The information stored on these paper files includes:

- fitting code
- description of fitting
- price of the fitting
- number in stock of each fitting
- minimum re-order level
- details of the supplier
- location of fitting in the warehouse

All transactions are currently carried out on paper and stored in files in a large filing cabinet.

The salesman then goes to the warehouse to locate the required fitting. The customer pays for the fitting and the salesman makes out a paper invoice and gives one copy to the customer and a second copy is given to the filing clerk. At the end of the day, the clerk processes all the invoices, records the money taken and updates the number of each fitting in stock. The clerk fills out and sends off the paper order forms to the appropriate supplier for any fittings which are below the minimum re-order level.

Description of the proposed computer-based system

The intention is to replace all the paperwork by introducing a computer-based database which contains the information described above, and automatically prints out new orders at the end of the day.

A systems analyst is to be employed to review the existing manual system. The analyst will be responsible for drawing up an action plan for the new computer-based system. This will then be designed, tested and implemented. All the necessary documentation will also be produced together with a full evaluation of the system performance 6 months after its introduction.

In the new system, when a customer asks for a fitting, the salesman pulls up the following information on a computer screen:

For Examiner's Use

BATHROOM FITTINGS SYSTEM v3.1

Please select from the following options:

1. **Bath**
2. **Shower door**
3. **Shower head**
4. **Shower tray**
5. **Taps**
6. **Toilet**
7. **Wash basin**

Once an option is chosen

- a selection of fittings of the required type is listed on the screen. (There is also a diagram of each one.)
- the customer identifies the fitting they want,
- the salesman clicks on the diagram using a mouse,
- all the information about the selected fitting is displayed on the screen,
- the salesman locates the fitting which is identified by a barcode *(which is the same as the fitting code)*,
- at the sales desk, the barcode is read by a barcode reader,
- the number in stock is automatically checked and updated on the database,
- the value of the daily takings is also automatically updated.

- When the minimum stock level for a part is reached, an order is automatically printed out together with the name and address of the supplier.
- When new stock arrives the barcodes are read and the database is automatically updated.

The following questions all refer to the above system:

For Examiner's Use

(a) Describe the tools that exist to help the analyst draw up an action plan and ensure that the project is completed on time and to budget.

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..... [4]

(b) Name **two** methods that the analyst could use to gather information about the existing manual system.

Explain how each method would be used to gather information.

Method 1: .....

Explanation: .....

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.....

Method 2: .....

Explanation: .....

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..... [6]

(c) State **two** items of hardware, other than a computer, that the analyst should recommend for this application. Justify your choice for each item.

For Examiner's Use

Item 1: .....

Reason: .....

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Item 2: .....

Reason: .....

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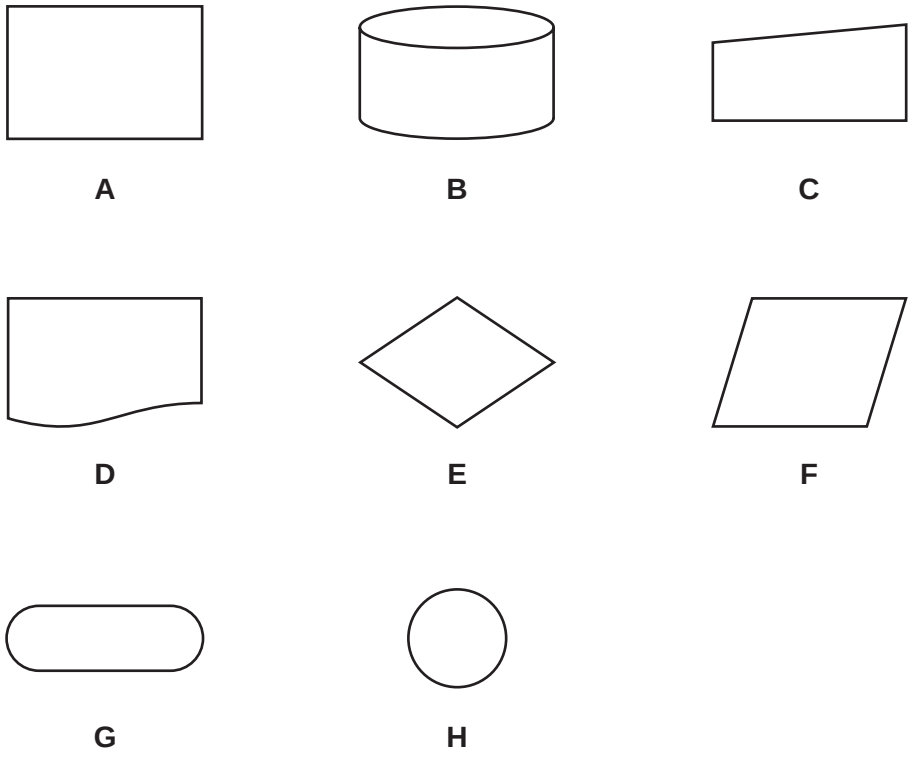
..... [4]

For Examiner's Use

(d) Identify what you would use the following system flowchart symbols for.



A .....

B .....

C .....

D .....

E .....

F .....

G .....

H ..... [4]

(e) Draw a flowchart to show how the new computer-based system will work.

For Examiner's Use

Include:

- what happens when a customer makes an enquiry,
- how a fitting is identified,
- how the database is updated when a fitting is sold,
- how new orders are produced,
- how a check is made on the daily money taken.

[8]

For Examiner's Use

(f) Would it be better to use existing software or arrange to have new software written for this application? Justify your answer.

Choice: .....

Reason for choice: .....

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..... [3]

(g) Describe a test strategy for the new computer-based system.

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..... [4]

(h) Give **three** examples of test data that could be used. Justify your choice for each example.

Example 1: .....

Reason: .....

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Example 2: .....

Reason: .....

.....

Example 3: .....

Reason: .....

..... [6]

For Examiner's Use

(i) State **four** items that should be included in the Technical Documentation supplied for maintenance of this system. For each one explain why it should be included.

Item 1: .....

Reason: .....

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Item 2: .....

Reason: .....

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Item 3: .....

Reason: .....

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Item 4: .....

Reason: .....

..... [8]

(j) State **three** methods that could be used to implement this new system. Explain why each method could be chosen.

For Examiner's Use

Method 1: .....

Reasons for choice: .....

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Method 2: .....

Reasons for choice: .....

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Method 3: .....

Reasons for choice: .....

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..... [9]

(k) Describe how the new system should be evaluated.

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..... [4]

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