Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME

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COMPUTER STUDIES **0420/32**

Paper 3 Alternative to Coursework **May/June 2014**

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 an HB pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, 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.

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

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.
All answers must refer to this information system.

The number of marks is given in brackets [ ] at the end of each part question.
The maximum number of marks is 60.

This document consists of **11** printed pages and **1** blank page.

In this question you are asked to read about:

- an existing manual, paper-based system for people to book a tour of a famous author's house
- the Internet-based booking system proposed to replace it.

You are given a description of both the existing system and the proposed new Internet-based booking system.

Description of the existing system

Timed tickets for tours of a famous author's house are issued, for a maximum of 10 people at 15 minute intervals from 10:30 to 15:00. Tickets for tours must be booked at least 1 week and up to 3 months in advance. Tickets are booked over the telephone and posted to the person making the booking.

When a person wants to book a tour, they ring up the company to ask if the time and date is available. The telephone line is available Monday to Saturday from 10:00 to 15:00 hours.

A diary is kept for the house showing the dates and times that have already been allocated and those still available. If there are spaces for the number of people, the booking is agreed. If not, similar times and dates are offered as alternatives.

When a telephone booking is made, the following details are **always** required:

- date of the tour
- time of the tour
- number of people, maximum 10
- details of the person making the booking
    - name
    - address
    - telephone number.

The diary for the House tours is updated and payment is taken using a credit/debit card over the telephone. The tickets are posted to the person who has made the booking.

Description of the proposed Internet-based booking system for tours of a famo[illegible] house

The proposal is to replace the existing system with an Internet-based booking system. This will include a touch screen terminal, installed in the car park, to allow bookings for house tours right up to the last minute. Tickets are still issued for 15 minute intervals. Each booking is for a specific day, time and number of people. Each ticket has a unique barcode and is emailed to the person who has made the booking. This ticket can be printed. The barcode can be sent directly to a smartphone as well. People can book online, via the Internet, using a computer or a smartphone for between 1 day and 12 months in advance.

The touch screen terminal in the car park is for bookings that day. People using this terminal are offered the next available tour time.

When a booking is made at the touch screen terminal, only the following detail is required:

- number of people, maximum 10.

Payment is taken using a credit/debit card or cash and the ticket is printed straight away.

A systems analyst is to be employed to review the existing manual method. The systems analyst will be responsible for drawing up an action plan for the new Internet-based booking 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.

1 **(a)** The systems analyst has decided to use project management software to produce a Gantt chart. The Gantt chart will be used to check the progress of this project.

Give **three** reasons why the systems analyst decided to do this.

Reason 1 .....

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Reason 2 .....

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Reason 3 .....

..... [3]

(b) The systems analyst wants to find out about the existing tour booking system.

(i) The systems analyst has decided to observe the staff taking telephone bookings.

Explain why the systems analyst chose this method.

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..... [3]

(ii) The systems analyst has decided to send a questionnaire to people who have made telephone bookings.

Explain why the systems analyst chose this method.

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..... [3]

(c) Draw a screen design for entering the required details when booking a tour in ad a computer.

[8]

(d) Extra information will be needed for the Internet-based booking system, in addition to that required by the existing telephone booking system.

Why is this information needed?

Information .....

Why it is needed .....

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..... [3]

(e) Draw a systems flowchart, with a key, to show how the Internet-based booking [illegible] tours of a famous author's house should work.

(i) Include in your systems flowchart:

- what happens when a person makes a booking.

[5]

(ii) Show in the key:

- **four** symbols that you have used in your flowchart
- a description of the purpose of each of these symbols.

Key	
Symbol	**Description**

[4]

(f) The systems analyst wants to ensure that the payments taken over the Internet a

Explain what steps the systems analyst needs to take.

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..... [3]

(g) The systems analyst is buying "off-the-shelf" software for the new Internet-based booking system.

(i) Explain, with reasons, why the systems analyst should choose "off-the-shelf" software.

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..... [3]

(ii) State possible drawbacks to making this choice.

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..... [2]

(h) The number of people in a tour group must be a positive whole number betwe 0 inclusive.

Give **three** different types of test data.

Using the number of people in a tour group, give **one** example of each of these types.

Explain why you chose each one as a good example.

Type 1 .....

Example 1 .....

Explanation .....

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Type 2 .....

Example 2 .....

Explanation .....

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Type 3 .....

Example 3 .....

Explanation .....

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..... [9]

(i) Write an algorithm, using pseudocode **or** a flowchart, which:

- inputs the number of people
- checks the number is between 1 and the number of places left on a tour
- outputs an error message if not
- deducts the number of people from the number of places left on the tour.

[6]

(j) This system needs to be thoroughly tested.

Describe what types of testing should be used.

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..... [3]

(k) State **one** method that could be used to implement this new system.

Describe the method and give **two** reasons why it should be chosen for the new Internet-based booking system.

Method .....

Description .....

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Reason 1 .....

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Reason 2 .....

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..... [5]

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