UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

2056917017

COMPUTER STUDIES **7010/32**

Paper 3 Alternative to Coursework **October/November 2012**

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.

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.

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This document consists of **12** printed pages.

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1 In this question you are asked to read about:

- an existing system for appointments in a doctors' clinic; this is manual and paper-based;
- the proposed replacement; this is to be a computer-based appointment system.

You are given a description of both the existing and the proposed new computerised system.

Description of the existing system

The clinic has several doctors. When a patient wants to book an appointment with a doctor, the patient rings the doctors' receptionist. The receptionist asks for the following details:

- patient name
- first line of address
- doctor requested

The receptionist checks the files to ensure that the patient is registered with the clinic. The receptionist looks to find the requested doctor's free appointments in the appointments book. The receptionist offers the patient a day and a time for the appointment. If this is agreed then the patient's name is written in the space in the appointment book for that day and time.

At the beginning of every day, the receptionist types an appointment list for each of the doctors for that day. The list contains the appointment times and patients' names.

When the patient arrives at the doctors' clinic for their appointment, they give their name to the receptionist. The receptionist informs each doctor as their patients arrive.

Description of the proposed computer-based system

The proposal is to replace all the paperwork. A computer-based appointment booking and arrival system will contain all the information described above. It will allow patients to book their appointments on a secure clinic website. On arrival at the clinic, the patient will be able to use a touch screen system to announce their arrival at the clinic.

Each of the doctors and the receptionist will have a personal computer and a printer. There will be a personal computer with a touch screen for the patients to announce their arrival at the clinic. The computers and printers will be connected to a Local Area Network (LAN).

In the new system, a patient will use a secure website to book an appointment with their doctor; they will only be able to book one appointment at any time. For patients to access the secure website the clinic will provide each patient with a code and the patient must choose a password.

When the patient arrives at the clinic, they will use the touch screen to choose the answers to the following questions:

- Choose male or female.
- Choose the day of the month you were born on.
- Choose the month you were born on.

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The system will use this information to identify the patient, the doctor and the time of the appointment. These details will be displayed on the screen and the patient will be asked to confirm their appointment. The system will then inform the doctor via their personal computer that the patient has arrived.

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A systems analyst is to be employed to review the existing manual method. The analyst will be responsible for drawing up an action plan for the new computer-based system. This will then be designed, built, tested and implemented. Technical and user documentation will be produced. Six months after the introduction of the new system, a full evaluation of its performance will be made.

(a) The systems analyst has decided to use a Gantt chart and a PERT chart to ensure that the project is delivered on time.

Explain what the following would be used for:

(i) Gantt chart

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(ii) PERT chart

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..... [4]

(b) Describe another software tool that the systems analyst could use to ensure that the project is delivered on time.

.....

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.....

..... [2]

(c) Name **two** methods the analyst could use to gather information about the existing manual system. Explain how each method would be used to gather information about this manual system.

For Examiner's Use

Method 1 .....

Explanation .....

.....

.....

.....

.....

.....

Method 2 .....

Explanation .....

.....

.....

.....

.....

..... [6]

(d) State **two** items of hardware that would be needed to connect the computers to the wired LAN for the clinic. Justify your choice for each item.

For Examiner's Use

Item 1 .....

Reason .....

.....

.....

.....

Item 2 .....

Reason .....

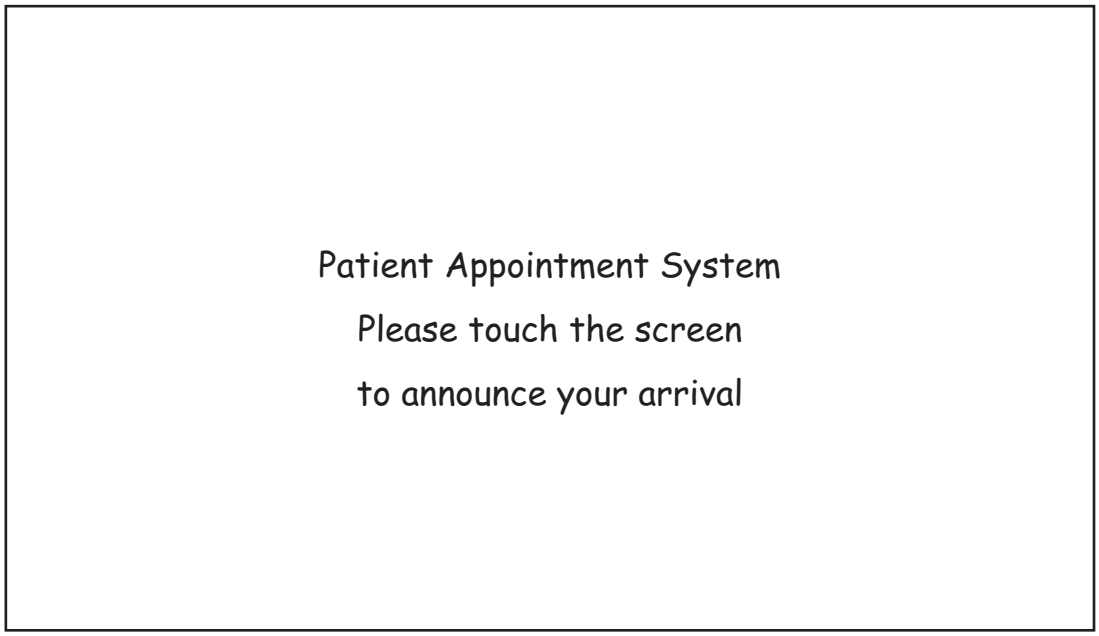
.....

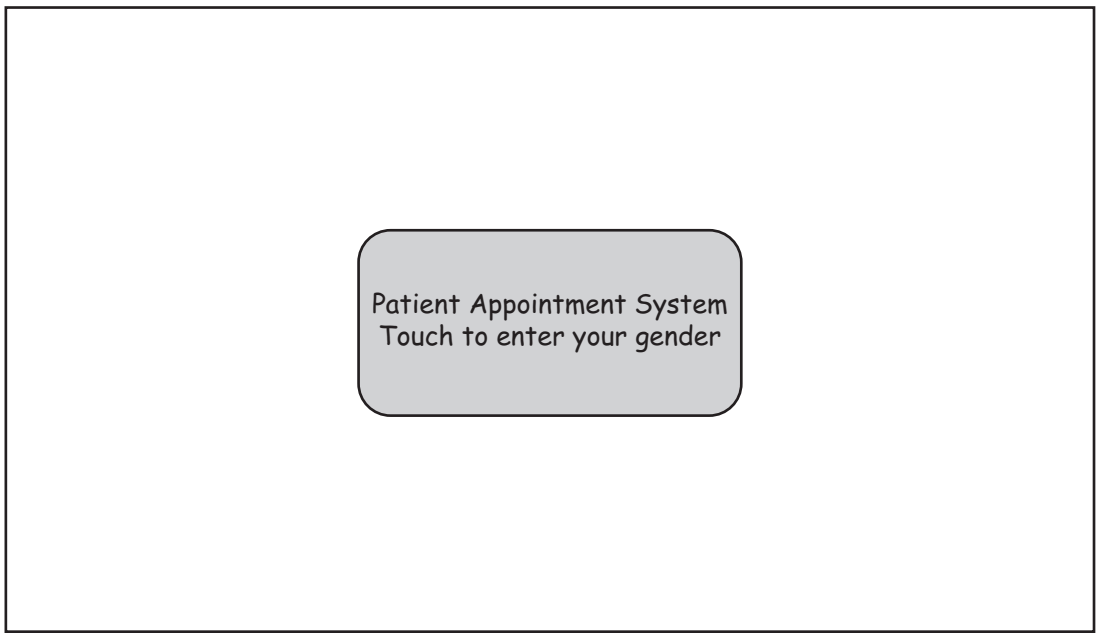
.....

..... [4]

(e) The first two screens for the check-in system at the clinic are shown below.

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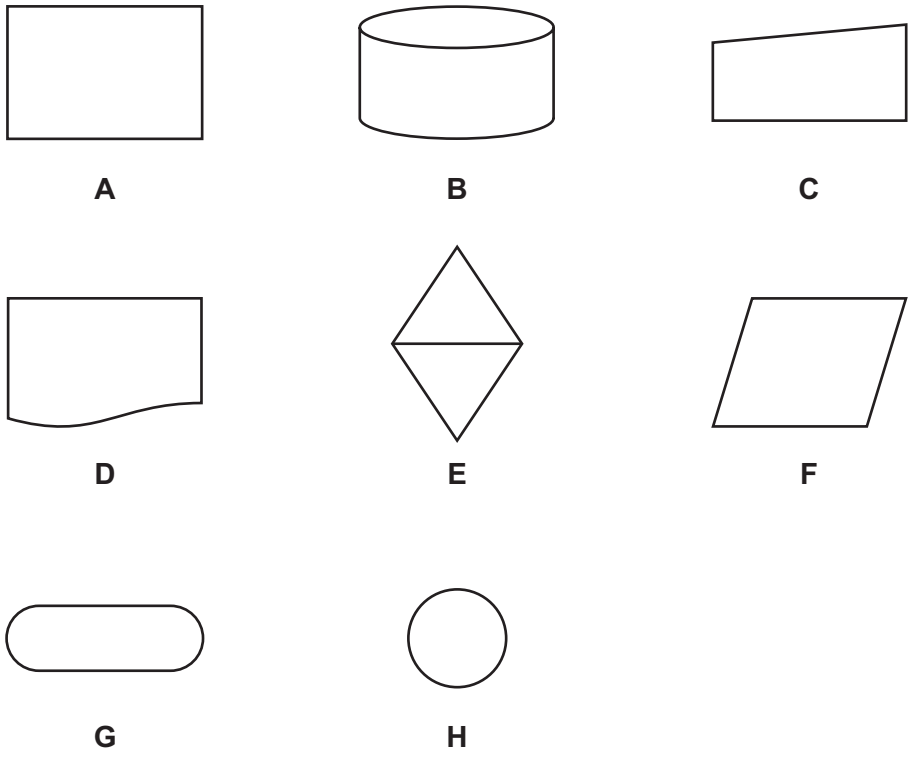
(i) Use the space below to design a touch screen to allow the patient to select if they are male or female. Your screen should allow the patient to correct an error.

(ii) Use the space below to design a touch screen to allow the patient to select the date in the month they were born. Your screen should allow the patient to correct an error.

[8]

(f) State the meaning of each of the following system flowchart symbols.

For Examiner's Use



A .....

B .....

C .....

D .....

E .....

F .....

G .....

H ..... [4]

(g) Draw a system flowchart to show how the appointment-booking part of the computer-based system should work.

For Examiner's Use

Include:

- what happens when a patient logs on
- booking an appointment
- producing a daily list of appointments for a doctor

[8]

For Examiner's Use

(h) The doctors' clinic is connected to the secure website through the Internet. The systems analyst wants to ensure that the website is secure.

Explain what steps he needs to take.

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.....

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.....

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..... [3]

(i) The systems analyst considers buying off-the-shelf software or bespoke software for the new computer-based system.

Explain, with reasons, which choice the systems analyst should make.

Choice .....

Reasons for choice .....

.....

.....

.....

..... [3]

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(j) The patient code is always two uppercase letters and four digits, for example AB1234.

Give **three** examples of test data that could be used for the patient code. Justify your choice for each example. Your reasons must be different in each case.

Example 1 .....

Reason .....

.....

Example 2 .....

Reason .....

.....

Example 3 .....

Reason .....

..... [6]

(k) State **four** items that should be included in the Technical Documentation supplied with this new system. For each one explain why it should be included.

Item 1 .....

Reason .....

.....

Item 2 .....

Reason .....

.....

Item 3 .....

Reason .....

.....

Item 4 .....

Reason .....

..... [8]

For Examiner's Use

(l) (i) State **two** methods that could be used to implement this new appointment system.

Method 1 .....

Method 2 .....

(ii) Choose one of these methods and give **two** reasons why this method should be chosen for the computer-based appointment system.

Chosen method .....

Reason 1 .....

.....

Reason 2 .....

..... [4]

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UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

COMPUTER STUDIES **7010/32**

Paper 3 Alternative to Coursework Scenario **October/November 2012**

INFORMATION FOR THE EXAMINATION IN 2012

This scenario should be given to candidates
at least 4 weeks before the examination.

No Additional Materials are required.

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READ THESE INSTRUCTIONS FIRST

This scenario should be given to candidates at least 4 weeks before the examination.

Candidates may consider the scenario in preparation for the actual examination.

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The Alternative to Coursework general scenario is:

appointment booking system for a doctors' clinic using a database

The question paper will contain a full description of a computer-based sample project based on the general scenario given above. Candidates will answer questions on the sample project.

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