OCR
RECOGNISING ACHIEVEMENT

**OXFORD CAMBRIDGE AND RSA EXAMINATIONS**
**Advanced GCE**

# COMPUTING 2511

Integrated Information Systems

Tuesday **21 JUNE 2005** Morning 1 hour 30 minutes

Additional materials:
None

| Candidate Name | Centre Number | Candidate Number |
|---|---|---|
| | | |

**TIME** 1 hour 30 minutes

**INSTRUCTIONS TO CANDIDATES**

- Write your name in the space above.
- Write your Centre number and candidate number in the boxes above.
- Answer **all** the questions.
- Read each question carefully and make sure you know what you have to do before starting your answer.
- If you run out of space for an answer, continue on the spare pages at the back.
- If you use these spare pages, you must write the question number next to your answer. You can also use the spare pages for rough work.

**INFORMATION FOR CANDIDATES**

- The number of marks is given in brackets [ ] at the end of each question or part question.
- The total number of marks for this paper is 90 of which 4 marks are allocated to the assessment of the quality of written communication.
- You will be awarded marks for the quality of written communication where an answer requires a piece of extended writing.
- No marks will be awarded for using brand names of software packages or hardware.

| FOR EXAMINER'S USE | |
|---|---|
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 6 | |
| 7 | |
| WC | |
| TOTAL | |

**This question paper consists of 11 printed pages and 5 lined pages.**



Registered Charity Number: 1066969
**[Turn over**

The owner of a health and fitness club uses a personal computer (PC) to assist in the running of the club.

**1** The PC runs an integrated software package including a word processor, a spreadsheet and a database.

**(a)** The integrated package is to be used to create personalised letters containing details about an event to all club members who are over 18 years old.

**(i)** Describe the role of the database in this task.

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.....[2]

**(ii)** Describe the role of the word processor in this task.

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.....[3]

**(b)** **(i)** Give **three** features of a spreadsheet that could be used to maintain financial records.

1 .....

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2 .....

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3 .....

.....[3]

**(ii)** Describe how the package could be used to create a detailed report of the annual accounts.

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.....[3]

Due to expansion, more computers and staff are needed.

**2** **(a)** Explain why the computers should be networked.

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**(b)** Describe how spooling is used when documents are sent to a printer.

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**(c)** Some files on the network are restricted to a few employees.
Describe how access to these files can be controlled.

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**(d)** The owner is considering the use of e-mail for communicating with employees.
State **five** features of e-mail that the owner would find useful.

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2 .....

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5 .....

.....[5]

The owner decides to open health and fitness clubs throughout the country. Members may use the facilities in any of these clubs.

**3** **(a)** Identify and describe a network that will allow the clubs to link their computer systems.

Network .....

Description .....

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.....[3]

**(b)** The clubs can use a distributed database system or a centralised database system to store members' records.

**(i)** Describe the meaning of the term distributed database system.

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.....[1]

**(ii)** Describe the meaning of the term centralised database system.

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.....[1]

**(iii)** Describe how each of the two database systems might keep data up-to-date.

Distributed database .....

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Centralised database .....

.....[2]

**(iv)** Describe how each of the two database systems might keep data secure.

Distributed database .....

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Centralised database .....

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.....[4]

A new computerised membership system will be required.

**4** A consultant produces an entity relationship diagram (ERD) for the membership system using a software tool.

**(a)** Describe the main features of an ERD.

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**(b)** Give **four** reasons for using a software tool to produce an ERD.

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3 .....

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4 .....

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**(c)** Describe **two** other ways in which software tools can be used during the development of a computer system.

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**5** **(a)** The new membership system will be implemented as a pilot.

**(i)** State the meaning of the term *pilot*.

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**(ii)** Explain **two** reasons for using a pilot in this case.

1 .....

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2 .....

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.....[4]

**(iii)** State **one** disadvantage of using a pilot in this case.

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**(b)** The users of the new system will require training.
Describe factors which should be considered when drawing up a suitable training programme.

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**6** A website is used to advertise the facilities at each club and to enable members to pay for bookings on-line.

**(a)** State **four** ways in which hypertext mark-up language (HTML) can be used to enhance a web page.

1 .....

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2 .....

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3 .....

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4 .....

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**(b)** State **two** advantages to the clubs of using the website for advertising.

1 .....

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2 .....

.....[2]

**(c)** Club members are concerned about carrying out financial transactions on the website. Explain suitable methods of security to overcome these concerns.

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**7** Volunteers at the clubs take part in a study into fitness levels.

Each volunteer is connected to a computer system while using an exercise bike.

Information on how the volunteer's body is reacting to exercise is stored in a database and displayed in graphical form on a computer screen.

**(a)** Describe **two** ways in which sensors are used in this case.

1 .....

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2 .....

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.....[4]

**(b)** Explain how each of the following is used in this case.

**(i)** Analogue to digital (AD) conversion.

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.....[2]

**(ii)** Digital to analogue (DA) conversion.

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.....[2]

**(c)** The computer increases the volunteer's work rate by making the exercise bike harder to pedal.

**(i)** Explain what is meant by an actuator.

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**(ii)** Describe **one** way in which an actuator is used in this case.

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**(iii)** Explain why real time processing is required in this case.

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.....[2]

If you use these lined pages to complete the answer to any question, the question number **must** be clearly shown.

For Examiner's Use