

**ADVANCED SUBSIDIARY GCE
 COMPUTING**

2508

Computer Systems Development and Practical Applications

MONDAY 14 JANUARY 2008

Afternoon

Time: 1 hour 30 minutes

Candidates answer on the question paper.

Additional materials: No additional materials are required



Candidate Forename

Candidate Surname

Centre Number

Candidate Number

INSTRUCTIONS TO CANDIDATES

- Write your name in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use blue or black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Answer **all** the questions.
- Do **not** write in the bar codes.
- Do **not** write outside the box bordering each page.
- Write your answer to each question in the space provided.
- Additional answer space is available on the lined page at the back of this booklet. Answers on this page **must** be clearly numbered.

INFORMATION FOR CANDIDATES

- The number of marks for each question 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.
- No marks will be awarded for using brand names of software packages or hardware.

FOR EXAMINER'S USE	
1	
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6	
QWC	
TOTAL	

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

1 A leisure centre manager proposes to replace the current computerised information system.

(a) State **three** reasons why the leisure centre may need to introduce a new computerised system.

Reason 1

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Reason 2

.....

Reason 3

.....[3]

The systems life cycle is used to produce the new system.

(b) (i) State **six** stages of the systems life cycle.

1.

2.

3.

4.

5.

6.[6]

(ii) Describe **four** of these stages.

Name of stage

Description

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.....[2]

Name of stage

Description

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.....[2]

Name of stage

Description

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.....[2]

Name of stage

Description

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.....[2]

(c) Describe how the leisure centre manager is involved in the systems life cycle.

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.....[3]

The leisure centre manager plans to introduce an expert system into the fitness suite. The expert system will contain a rule base and an inference engine.

(d) Explain what is meant by the terms

(i) rule base
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.....
.....[2]

(ii) inference engine
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.....[2]

2 State and describe the **most suitable** method of changeover for each of the following applications.

(a) Introducing a new on-line seat booking system for a theatre company, allowing seats to be booked by a number of ticket agents.

Method of changeover
Description
.....
.....
.....[3]

(b) Introducing a new electronic point of sale (EPOS) system for a chain of restaurants over a period of time.

Method of changeover
Description
.....
.....
.....[3]

3 (a) State **two** advantages and **two** disadvantages of choosing off-the-shelf software instead of custom-written software.

Advantage 1

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Advantage 2

.....[2]

Disadvantage 1

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Disadvantage 2

.....[2]

(b) For each of the following activities, state a suitable type of software package. In each case, state **one** feature of the package which makes it a suitable choice.

(i) To maintain stock records.

Type of software

Feature

.....[2]

(ii) To produce plans for new buildings.

Type of software

Feature

.....[2]

4 A local authority has a number of libraries.

(a) When a book is borrowed, a barcode is scanned. A typical barcode is 0351636277.
The last digit is a check digit.

(i) Explain how the check digit was calculated.

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.....[4]

(ii) Describe **two** other validation checks that could be used on the barcode.

Validation Check 1
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Validation Check 2
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.....[4]

(b) Describe how the local authority could use a management information system (MIS) at each of the following levels.

Operational level

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Tactical level

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Strategic level

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[6]

The local authority is concerned about the health risks that may be caused to library employees by the use of computer systems.

(c) State **three** different health risks that give cause for concern, and for each state a method of reducing the risk.

Health risk 1

Method

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Health risk 2

Method

.....

Health risk 3

Method

.....[6]

5 Describe how an image is captured using

(i) a scanner

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.....[4]

(ii) a video capture card

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(iii) a digital camcorder.

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.....[4]

6 A software developer has been asked to design software for school administration.

(a) Describe **three** factors that should be considered when designing a suitable human computer interface.

Factor 1

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Factor 2

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Factor 3

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.....[6]

