OXFORD CAMBRIDGE AND RSA EXAMINATIONS

Advanced Subsidiary GCE

COMPUTING   **2508**

Computer Systems Development and Practical Applications

Thursday   **13 JANUARY 2005**   Afternoon   1 hour 30 minutes

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 of the booklet.
- 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	
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TOTAL	

This question paper consists of 10 printed pages and 2 lined pages.

1 The management of a hospital is considering improving its information system. A systems analyst is employed to carry out a feasibility study.

(a) Name and describe **three** factors that should be considered in the feasibility study.

Factor 1 ....

Description ....

....[2]

Factor 2 ....

Description ....

....[2]

Factor 3 ....

Description ....

....[2]

(b) State **three** methods of fact finding that could be used.

Method 1 ....[1]

Method 2 ....[1]

Method 3 ....[1]

The systems analyst produces a system specification. System flowcharts and data flow diagrams (DFDs) are used in the system specification.

(c) (i) State **two** items included in a *system flowchart*.

Item 1...

....[1]

Item 2...

....[1]

(ii) State **two** items included in a *data flow diagram*.

Item 1...

....[1]

Item 2...

....[1]

Direct changeover and parallel running are two ways of introducing a new information system.

(d) Explain the meaning of the terms

  (i) Direct changeover...

  ....

  ....[2]

  (ii) Parallel running...

  ....

  ....[2]

The information system has been in use for some time and requires software maintenance.

(e) Explain the purpose of *software maintenance*.

  ....

  ....

  ....

  ....[2]

[Turn over

2 A small mail order company wishes to purchase new software.

For each of the following activities, state a suitable type of application package. In each case, explain your choice.

(a) To create a leaflet advertising special offers

Type of software ....

Explanation ....

....

....[2]

(b) To create invoices for customer orders

Type of software ....

Explanation ....

....

....[2]

(c) To communicate with customers using the Internet

Type of software ....

Explanation ....

....

....[2]

(d) To maintain stock records

Type of software ....

Explanation ....

....

....[2]

3 Describe how each of the following are used in data capture. In each case, suggest a suitable use.

(a) Voice recognition

Description ....

....

....

Use..[3]

(b) Optical Mark Recognition(OMR)

Description ....

....

....

Use..[3]

(c) Touch screen

Description ....

....

....

Use..[3]

(d) Magnetic stripe card

Description ....

....

....

Use..[3]

[Turn over

4 The computer system used by travel agents includes a Graphical User Interface(GUI).

(a) Explain what is meant by a *user interface*.

....

....

....[2]

(b) State **three** features of a GUI.

Feature 1 ....[1]

Feature 2 ....[1]

Feature 3 ....[1]

(c) Name and describe a different type of human computer interface (HCI) used by the programmers who maintain the computer system.

Human computer interface ....

....[1]

Description ....

....

....[2]

5 Name and describe a suitable method of processing for each of the following applications. In each case give a reason for your choice.

(a) Processing the weekly wages for employees of a large company

Method of processing...[1]

Description ....

....

....[2]

Reason..

....[1]

(b) Booking an airline ticket on-line

Method of processing...[1]

Description ....

....

....[2]

Reason..

....[1]

[Turn over

6 A retail company has a number of stores located in many towns.

(a) At the point of sale terminals, product codes are scanned. A typical product code is 0201776294; the last digit is a check digit.

(i) Name and describe **two** validation checks that could be used on the product code **before** the check digit is validated.

Validation Check 1 ....[1]

Description...

....[1]

Validation Check 2 ....[1]

Description...

....[1]

(ii) Explain how the computer validates the check digit.

....

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....

....

....[4]

(b) State how the retail company could use a management information system (MIS) at each of the following levels.

(i) Operational Level...

....[1]

(ii) Tactical Level ....

....[1]

(iii) Strategic Level ....

....[1]

7 Advances in technology have made it possible for many organisations to allow their employees to work from home.

(a) State **two** disadvantages to the employer of employees working from home.

Disadvantage 1 ....

....[1]

Disadvantage 2 ....

....[1]

(b) State **two** advantages and **two** disadvantages to the employee of working from home.

Advantage 1 ....

....[1]

Advantage 2 ....

....[1]

Disadvantage 1 ....

....[1]

Disadvantage 2 ....

....[1]

To protect personal data used by organisations, the government continues to review current data protection legislation.

(c) State **four** features of *current data protection legislation* that protect personal data.

Feature 1..

....[1]

Feature 2..

....[1]

Feature 3..

....[1]

Feature 4..

....[1]

[Turn over

(d) Describe **two** limitations of *current data protection legislation*.

Limitation 1 ....

....

....[2]

Limitation 2 ....

....

....[2]

(e) Many organisations are also concerned about data privacy and data integrity.

For each of these, describe precautions that could be taken to reduce concerns.

Data privacy

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....[3]

Data integrity

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