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Centre number						Candidate number				
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**OXFORD CAMBRIDGE AND RSA EXAMINATIONS
ADVANCED SUBSIDIARY GCE**

F451

COMPUTING

Computer Fundamentals

FRIDAY 27 MAY 2011: Morning

DURATION: 1 hour 30 minutes

SUITABLE FOR VISUALLY IMPAIRED CANDIDATES

Candidates answer on the question paper.

OCR SUPPLIED MATERIALS:

None

OTHER MATERIALS REQUIRED:

None

READ INSTRUCTIONS OVERLEAF

INSTRUCTIONS TO CANDIDATES

- **Write your name, centre number and candidate number in the boxes on the first page. Please write clearly and in capital letters.**
- **Use black ink. Pencil may be used for graphs and diagrams only.**
- **Read each question carefully. Make sure you know what you have to do before starting your answer.**
- **Write your answer to each question in the space provided. Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).**
- **Answer ALL the questions.**

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 100.**

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1 (a) State what is meant by

(i) an input device

[1]

(ii) an output device

[1]

(b) A central heating system is used to control the heating in a house.

(i) State an automatic input device which would be used with this system, explaining why it is necessary.

[2]

(ii) State an automatic output device which would be used with this system, explaining why it is necessary.

[2]

2 (a) Describe the following types of data transmission:

(i) Serial data transmission

[2]

(ii) Parallel data transmission

[2]

(b) State a computer application which may use parallel data transmission, justifying your answer.

Application _____

Justification _____

[2]

3 A seaside town has a number of interactive information boards placed at intervals along the promenade. The purpose of the boards is to provide information to holidaymakers. A user might search for entertainment available or reasonably priced guest houses that have vacancies.

(a) State TWO peripherals which would be used at each site, justifying your answers.

Peripheral 1 _____

Justification _____

_____ **[2]**

Peripheral 2 _____

Justification _____

_____ **[2]**

- (b) The data needs to be up to date so the information boards are connected in a network which is controlled from the tourist information office on the promenade.

State a method of connectivity which could be used and justify your choice.

Method _____

Justification _____

_____ [3]

- (c) (i) The interface used by holidaymakers is a menus interface.**

Explain why a menus interface was chosen for this application.

[3]

- (ii) The interface used by workers in the tourist information office to book accommodation for holidaymakers is a forms interface.**

Explain why a forms interface was chosen for this application.

[3]

4 A car insurance firm collects data from its customers and stores it on a computer.

(a) The customer name is stored using the computer's character set.

(i) Explain what is meant by the character set of a computer.

[2]

(ii) Explain the use of code to represent a character set.

[2]

(b) When data is input, it must be verified and validated.

(i) When the details of a new customer are input to the system, the data must be verified. Describe ONE way that the data input can be verified.

[2]

(ii) One piece of data that is required is the make of car. An existence check and a presence check will be carried out on this data.

Describe what is meant by

existence check _____

presence check _____

[2]

5 A supermarket stores data about customers who have loyalty cards.

(a) Explain why some customers may be concerned about giving their personal details to the supermarket.

[2]

(b) Describe steps the supermarket can take to reassure customers about their concerns.

[5]

6 A systems analyst has been in charge of creating an automated production line for a factory.

(a) The analyst followed the stages of the systems life cycle.

Describe the purpose of THREE of the stages of the systems life cycle which the analyst must complete before the software can be written.

1 _____

_____ [2]

2 _____

_____ [2]

3 _____

_____ [2]

**(b) The analyst uses the waterfall model of the systems life cycle.
Describe the waterfall model.**

[3]

(c) Explain the importance of evaluating the system and the criteria that should be used in the evaluation.

[4]

(d) Describe TWO types of maintenance which may need to be carried out on the finished system.

1 _____

_____ [2]

2 _____

_____ [2]

7 A processor contains a number of special registers and buses.

(a) Describe the contents of the following special registers.

Memory Data Register (MDR)

[2]

Current Instruction Register (CIR)

[2]

Accumulator

[2]

(b) Describe the use of different types of bus in the processor.

[4]

8 Data is communicated between devices in a network.

(a) A protocol is needed in a network

State what is meant by a protocol.

[2]

(b) Describe THREE parts of a protocol which would be necessary to allow communication in a network.

1 _____

[2]

2 _____

[2]

- 9 (a) Describe each of the following types of operating system and give an example of where each could be used.

Multi-tasking

Use _____
_____ [4]

Multi-user

Use _____
_____ [4]

(b) (i) State what is meant by utility software.

[1]

(ii) A student uses a computer to produce coursework for a number of subjects.

Explain how the student can use file handling utilities with the computer.

[3]



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