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

F451

COMPUTING

Computer Fundamentals

THURSDAY 14 JANUARY 2010: Afternoon

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 clearly in capital letters, your Centre Number and Candidate Number in the boxes on the first page.**
- **Use 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.**
- **Write your answer to each question in the space provided, however additional paper may be used if necessary.**

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) (i) Define the term hardware.

[1]

(ii) Some hardware items are called peripherals.

Explain what is meant by a peripheral.

[2]

(b) (i) Define the term software.

[1]

(ii) Explain the difference between system software and applications software.

[2]

- (c) (i) State an application of a computer system which requires a real-time operating system, justifying your choice.**

Application _____

Justification _____

_____ [2]

2 (a) When data is transmitted between machines on a network, the data can be sent using either packet switching or circuit switching.

(i) Describe what is meant by packet switching.

[2]

(ii) Describe what is meant by circuit switching.

[2]

(iii) Give ONE advantage and ONE disadvantage of using packet switching rather than circuit switching.

Advantage _____

Disadvantage _____

_____ [2]

(b) The analyst produces user and technical documentation for the new system.

(i) State THREE items which would be contained in the user documentation.

1 _____

2 _____

3 _____

_____ **[3]**

(ii) Describe TWO kinds of diagram which may be in the technical documentation.

_____ **[4]**

(c) The client file requires pictures to be stored to identify the clients.

Describe TWO methods of capturing the pictures for the system.

Method 1 _____

Method 2 _____

_____ [4]

(d) Explain the need for legislation to govern the use of computers for storing personal data.

[4]

4 (a) Describe what each of the following parts of a computer does.

(i) Control unit

[3]

(ii) Memory unit

[3]

(iii) ALU

[3]

(b) When data is being transmitted around a computer, buses are used.

Name and describe the functions of TWO different types of bus.

Type 1 _____

Type 2 _____

[4]

5 A library directs all members to an area where they can have their loans input into the computer system. The membership number is read from the member's card.

(a) Describe TWO ways that the membership number can be input to the computer system.

1 _____

2 _____

_____ **[4]**

(b) Describe TWO forms of output which could be produced by the system following the input of the membership number.

1 _____

2 _____

_____ **[4]**

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6 An author works from home using a computer system. She uses a number of pieces of utility software. State the purpose of each of these types of utility and describe how the author would use them in her work.

(i) Compression software

Purpose _____

Use _____

_____ **[3]**

(ii) File handlers

Purpose _____

Use _____

_____ **[3]**

(iii) Hardware drivers

Purpose _____

Use _____

_____ **[3]**

(iv) Back up utility

Purpose _____

Use _____

_____ **[3]**

7 (a) (i) Describe what is meant by the bit rate of data transmission.

[2]

(ii) State a type of data transmission which would require a high bit rate, giving reasons for your choice.

Data transmission _____

Reasons _____

[3]

(b) Explain why a handshake signal is necessary.

[3]

8 (i) Express the denary number 107 as an 8 bit binary number.

[2]

(ii) Express the denary number 107 as a hexadecimal number.

[2]

(iii) Use your previous answers to show the relationship between binary and hexadecimal notations.

[3]