

<b>Candidate Forename</b>		<b>Candidate Surname</b>	
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<b>Centre Number</b>						<b>Candidate Number</b>				
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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.**

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[1]

**(ii) Some hardware items are called peripherals.**

**Explain what is meant by a peripheral.**

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[2]

**(b) (i) Define the term software.**

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[1]

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

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[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.**

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**[2]**

**(ii) Describe what is meant by circuit switching.**

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**[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.**

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**[4]**

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

**(i) Control unit**

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**[3]**

**(ii) Memory unit**

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**[3]**

**(iii) ALU**

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**[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** \_\_\_\_\_

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**Type 2** \_\_\_\_\_

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**[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.**

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**[2]**

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

**Data transmission** \_\_\_\_\_

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**Reasons** \_\_\_\_\_

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**[3]**

**(b) Explain why a handshake signal is necessary.**

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**[3]**

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

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[2]

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

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[2]

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

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[3]