**OCR GCSE Computing Mock Exam May 2013**

Name

Instructions to candidates:

Read each of the questions carefully before you write your answer. Answer ALL questions to the best of your ability.

Write your answer to each question in the space provided, additional paper will be given if required.

The number of marks for each question is given at the end of the question in brackets [ ]

The Quality of written communication is assesses in the questions marked by an asterisk **( \*)**

The total number of marks available for this paper is 80

**Time Allowed is 1 hour**

|  |  |  |
| --- | --- | --- |
| **Q** | **M** | **MA** |
| **1** | **9** |  |
| **2** | **12** |  |
| **3** | **9** |  |
| **4** | **16** |  |
| **5** | **10** |  |
| **6** | **12** |  |
| **7** | **12** |  |
| **Total**  **80** |  | |

**Q 1. An advertisement for a personal computer is shown below.**



**a) i What is software? [ 1 mark ]**

**ii Give one example of software from the advertisement [ 2 marks ]**

**b. The table below contains a list of hardware devices. [6 marks ]**

**Tick one box in each row to show what sort of device it is.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Device** | **Input** | **Output** | **Processing** | **Storage** | **Communication** |
| **Monitor** |  |  |  |  |  |
| **CPU** |  |  |  |  |  |
| **Mouse** |  |  |  |  |  |
| **DVD drive** |  |  |  |  |  |
| **Speakers** |  |  |  |  |  |
| **Printer** |  |  |  |  |  |

**Q 2. a ) A website is made up of different types of files. State what each of the files in the table below is used for. [4 marks]**

|  |  |
| --- | --- |
| **File type** | **Used for** |
| **HTML** |  |
| **JPEG** |  |
| **MP3** |  |
| **PDF** |  |

**b) List 3 devices that would have computer systems embeded in them**

**[3 marks]**

**1.**

**2.**

**3.**

**c) The diagram below shows a computer system at its most basic form**

**Program**

**Process**

**Input**

**Output**

**Storage**

**Complete the sentences using the correct word, use the diagram above to help you. [5 marks]**

A computer system has one or more ……………… to provide data. This data is then …………… in some way. The outcome of the processing is sent to an …………. or it may be …………. until some event happens that cause it to be output.

For processing to take place. There needs to be a set of instructions of what needs to be done. These instructions are called a ……………….

**Q3. a ) Software are the applications and programming instructions that tell your computer what to do. There are two main types of software, applications software and system software. [ 3 marks ]**

**i. state *one* type of system software**

**……………………………**

**ii. state *two* types of application software**

**…………………………….**

**…………………………….**

**b) Computer systems and software applications have enabled almost all office jobs to be completed more efficiently and quickly. As well as producing things like emails, letters, reports and spreadsheets, computers have provided many other benefits to the modern day office. Explain using examples how the following two topics have improved the working of the office. [ 6 marks ]**

**Collaboration**

**Teleworking**

**4. a ) The following logic circuit can be written as Q = NOT (A AND B)**



**A**

**Q**

**B**

**C**

**State the output (Q) of the circuit if the inputs are:**

**i A = 1 B = 0 Q = [1 mark]**

**ii A = 1 B = 1 Q = [1 mark]**

**Complete the truth table for the following logic gates [4 marks]**



**A**

|  |  |  |
| --- | --- | --- |
| **A**  **C** | **B** | **C** |
| **B** |  |  |
|  |  |  |
| **A**  **B**  **C** | **A**  **B**  **C** | **A**  **B**  **C** |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| **A** | **B** | **C** |
|  |  |  |
|  |  |  |
| **A**  **B**  **C** | **A** |  |
|  |  |  |

**Create a truth table and then draw the logic circuit for [10 marks]**

|  |  |  |  |
| --- | --- | --- | --- |
| **A** | **B** | **C** | **P** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**P = (A AND B) NOT C**

**5. Show your workings out for the following questions**

**a. Convert the denary number 43 into binary [1 marks]**

**b. Convert the binary number 10101011 into denary [2 marks]**

**c. Add the following binary numbers: [2 marks]**

**1010**

**+ 100**

**d. Add the following binary numbers 10001 + 11001 [2 marks]**

**10001**

**+ 11001**

**e. Add these binary numbers together [2 marks]**

**10101010**

**+ 10010011**

**f. State what the problem is when a number becomes too large to fit into a byte [1 mark]**

**6. Below is an example of an algorithm**

**Limit = 200  
INPUT WagesEarned  
IF WagesEarned < Limit THEN  
 PAY = WagesEarned  
ELSE  
 PAY = WagesEarned + 50  
END IF**

**a. The wages earned by each worker is either £2 for each Teddy Bear or £5 for each hour they have worked, whichever is the larger.  
  
Write the algorithm that allows the user to   
1.) input the number of Teddy Bears made and number of hours worked   
2.) calculate the wages for the number of Teddy Bears made  
3.) calculate the wages for the number of hours worked  
4.) outputs the larger of the two results [6 marks]**

**b. Draw a very simple flow chart for taking a pizza order. The program must get the pizza size first and then one or more toppings.  
  
There is a loop to get more than one topping. This loop is controlled by the decision box that asks “Enough toppings?”. If the answer is “Yes” to this question the program stops, otherwise it keeps asking for the next topping  
  
The line that loops around joins the middle of a line, it does not come into a box. [6 marks]**

**7a. Most computers use at least one storage device. Explain one reason why a secondary storage device is needed in most computer systems. [2 marks]**

**b. Jack is music student he needs to take his files from his home computer to college. Identify a method of storage that is suitable for taking his music files into college and state why this method is suitable. [2 marks]**

**c. State which type of secondary storage is most appropriate for use in the following situations and explaining why it is the most suitable. [8 marks]**

**i. Storing tracks on an MP3 player**

**ii. Transferring work from a school computer to home**

**iii. Distributing a movie**

**iiii. As the main storage area on a school network**