

|  |  |
| --- | --- |
| CANDIDATE NAME: |  |
| CANDIDATE NUMBER: |  |

School Of Coding

**GCSE OCR (9-1) Computer Science**

**Component 1 - Computer Systems**

Practise Paper 1

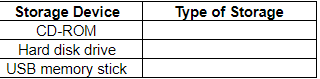
**Time:** 1 hour 30 minutes

**Instructions**

* Use black ink.
* Write your name at the top of this page
* Answer all questions in the spaces provided

**Information**

* The marks for each question are shown in brackets
* The maximum mark for this paper is 80.

1. Eve is suspicious that her laptop caught a virus because it can see it slowing down.
   1. Eve runs some Anti-Virus utility software to check if there is any virus detected.
      1. Define what is a utility software. [1]
      2. Give two examples of utility software. [2]
   2. The Anti-Virus software doesn’t show any viruses detected, so Eve decides to a full service on  
      her laptop. During the full service she finds out that her hard disk is 20% fragmented.
      1. Name a utility software that will help Eve defragment her hard disk [1]
      2. Describe the defragmentation process [3]
      3. Give one reason why the hard disk shouldn’t be fragmented [2]
2. The CPU consists of following three main components.   
   **Control Unit  
   Arithmetic Logic Unit  
   Cache**
   1. Explain what the role of each component is. [6]
   2. Explain what is happening during the fetch-decode execute cycle, using the words:   
      memory, CPU, instructions [3]
3. The BIOS is needed to startup a computer.
   1. State what the abbreviation BIOS stand for [1]
   2. Describe the function of the BIOS [2]
   3. The BIOS are stored into the computer’s ROM rather than RAM. Why is that? [2]
4. James is a multitasker; he has 3 computer screens so that he can have all the programs that he is using open at the same time.
   1. Because of that, James' computer is using virtual memory. Describe what virtual memory is. [4]
   2. State one advantage and one disadvantage of virtual memory. [2]
5.    
   1. Fill in the table above with the type of storage for each device. [3]
   2. List two advantages and two disadvantages of magnetic storage [4]
   3. How many megabytes are inside 4 TB? Show your work. [2]
6. An accounting firm wants to move all their paper documents to the Cloud.
   1. State two reasons why that would be a great idea for the firm. [4]
   2. State two reasons why that might end up being a bad idea. [4]
7. An education center decided to collect details for their students when they enroll in the institute.   
   The education center would like to keep their details to inform them of their progress and to contact them for   
   any new courses that are coming up. Describe what measures the center should take to make sure   
   that the student’s data is stored legally. [6]
8. A company discovered that their employees have been hit with a phishing email.
   1. Explain what phishing is. [2]
   2. Some of those emails contained a virus that infected some of the computers within the company.  
      A virus is a type of malware.
      1. Explain what malware is [1]
      2. State and describe two other types of malware [6]
9. Front-end Developers and Back-end Developers in a Software Engineering company work together to   
   make a website for a client. All their computers are connected in a Peer-to-Peer network.   
   An IT consultant suggests the company should adopt a Client-Server network setup.
   1. Explain the term Peer-to-Peer network. [2]
   2. Explain the term Client- Server network [2]
   3. State two reasons how will this transition benefit the developers. [2]
10. Describe the function of each of the following network protocols: [6]  
    **TCP  
    HTTP  
    HTTPS  
    SMTP**

1. John is trying to connect to the Internet but he gets an error that something is wrong with his IP address.   
   Although he doesn’t know what an IP address is.
   1. Explain to John what an IP address is [2]
   2. After some research, John found out about something called the MAC address.   
      He is now confused, what is the difference between an IP address and a MAC address.  
      Explain to him what a MAC address is. [2]
   3. At the company that John works in, is using network layers, when working with network   
      protocols. Name three benefits of using layers. [3]