**Isaac GCSE Booster – Network Fundamentals Part 2**

**Handout 1 – Workbook**

**Activity 1 – Match the Address**

Match the correct type of address (IP or MAC) for each scenario.

|  |  |
| --- | --- |
| Scenario | **IP Address or MAC Address** |
| **Used to locate a device on the internet** | IP Address |
| **A fixed address unique to your device** | MAC Address |
| **Can change based on the network you join** | IP Address |
| **Assigned by the hardware manufacturer** | MAC Address |

**Activity 2 – Match the Protocols**

Match each protocol to its purpose.

|  |  |
| --- | --- |
| **Protocol** | **Purpose** |
| HTTP/HTTPS | Web Browsing |
| SMTP | Sending Emails |
| FTP | File Transfer |
| POP | Retrieving Emails  (Downloads from server) |

**Activity 3 – Label the URL**

Here’s a URL: [**https://www.example.com/products/shoes**](https://www.example.com/products/shoes)

Identify the following parts of the URL:

1. Scheme(Protocol): \_\_\_\_https\_\_\_\_\_\_\_\_\_\_\_
2. Top-Level Domain: \_\_com\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Sub-Domain: \_www\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Sub-Directory: \_\_\_\_\_products/shoes\_\_\_\_\_\_\_\_\_\_

**Activity 4 – Explain question**

A school has so far decided not to use cloud storage for its data storage. All data is stored locally on servers and secondary storage. The head teacher has been told they should move over to storing students’ data such as their work in the cloud instead.

Explain **THREE** reasons why the school should move over to using the cloud and **ONE** reason why they should not. (**Hint:** It’s important you make a point for each and then relate your answer back to the students/staff)

**Use the table provided and make a generic point. Then back this up with a clear explanation.**

|  |  |
| --- | --- |
| **Positives** | **Negatives** |
| **Unlimited from the point of view of the user.** | **Can be expensive to store large amounts of data.** |
| **Can access your data from anywhere.** | **Can’t access your data if your internet connection goes down or is poor.** |
| **Can collaborate with others.** | **Your data could be hacked without your knowledge.** |
| **Automatic backups of your data.** | **Your data may below to third party providers.** |

**Activity 5 – Past Paper Style Question**

1. HTTP is an example of a network protocol. Define the term network protocol. [2 marks]

*Rules; that allow devices / networks to communicate / transfer data;*

1. The application layer and the transport layer are two of the layers within the TCP/IP model. What are the names of the other two layers of the TCP/IP model? [2 marks]  
     
   Internet • Link (layer) • Network (layer)

**Activity 6 – Sort the protocols**

These are some common protocols used in computer networking.

* HTTP (Hyper Text Transfer Protocol)
* HTTPS (HTTP Secure)
* FTP (File Transfer Protocol)
* POP (Post Office Protocol)
* IMAP (Internet Message Access Protocol)
* SMTP (Simple Mail Transfer Protocol)
* TCP/IP(Transmission control protocol/Internet Protocol)

Type in the name of the protocol that matches its purpose:

|  |  |
| --- | --- |
| Protocol | **Purpose** |
| SMTP | Used to send emails |
| HTTPS | Used to send webpages that need to be encrypted |
| POP | Used to download a copy of the email from the email server |
| TCP/IP | Used to error check packets and route packets to the correct destination. |
| HTTP | Used to send unsecure web pages |
| IMAP | Allows remote control of a mailbox. Allows you to open an email without downloading it to your client machine |
| FTP | Used to upload files to an online webserver such as HTML pages to a hosting provider. |

**Activity 7 – Isaac Gameboard**

Complete the gameboard again here, can you get 10 out of 10 now?

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