Name: Class:

Task 1

A new secondary school for 11–18-year-old students is being built. It will house 150 desktop computers in IT rooms. It will also need to cope with over 1200 student devices (tablets or laptops) connecting to its network. Other peripheral equipment such as printers will also be available.

(a) Name the types of devices which will be connected with a wired connection.

(b) Name the types of devices which will be connected with wireless connections.

(c) What are all the different hardware products that will be needed by the school to connect a desktop computer to the Internet?

Task 2

For each of the scenarios below, suggest an appropriate connection media.

Options for connection media include Ethernet, fibre-optic, Bluetooth, Wi-Fi, mobile network.

|  |  |
| --- | --- |
| **Scenario** | **Connection media** |
| A laptop for working in and around the office |  |
| Transferring files from one mobile device to another quickly and securely whilst in a hotel room |  |
| Accessing company files via the cloud when in a park |  |
| To connect a business computer to the company’s LAN with a fast and reliable connection |  |
| To connect a company’s LAN to the Internet |  |
| Connecting a smart TV to a home network |  |

Task 3

(a) Go to: <https://checker.ofcom.org.uk/mobile-coverage>

(b) Enter your school / college postcode

(c) Select ‘View map of available services’

(d) Which mobile network would give the best reception?

Task 4

A start-up video production business has grown to five employees, each who have their own personal computer. They have recently purchased a better Internet package which the marketing leaflet says has the following features:

* Up to 80 Mbps
* Unlimited usage
* Fibre broadband

(a) The company doesn’t have a fibre line put in but is able to use its old copper telephone line. How is it possible to be a ‘fibre broadband’ connection?

(b) When the company checks the connection speed it seems to only reach around 60 Mbps. Why might they not be able to get 80 Mbps.

(c) The company often needs to upload their videos to share with customers. They find that this takes at least three times as long as when they download videos.

Why is this the case?

Task 5

An employee works from home. They need a fast, reliable connection to access the Internet from a desktop computer. They also need to be able to work in any room of their house on a laptop and to be able to transfer files wirelessly between their mobile devices.

(a) What connection types could you suggest they use?

(b) What are the advantages and disadvantages of using Wi-Fi to connect the desktop computer?

**Advantages**

**Disadvantages**