Name: Class:

Task 1

For each of the scenarios in the table below, explain which type of connection would work best and why this would be the most suitable type.

|  |  |  |
| --- | --- | --- |
| **Scenario** | **Connection type** | **Why this is the most suitable type?** |
| A large multinational company with over 1000 employees needs a fast Internet connection to their head office. |  |  |
| A homeowner decides that they will let out one of their rooms on Airbnb. They wish to provide guests with access to the Internet. |  |  |
| A small community centre is being built. One of the rooms will be used as an office and have a single desktop PC. A phone line has already been installed. They will require an Internet connection. |  |  |

Task 2

Amelia lives in the countryside at the bottom of a valley. There is a mobile phone base station around two miles from her house, yet she has no signal on her phone. Her friend Mila lives five miles from the same transmitter, and she has a very good signal with her phone showing maximum bars.

(a) Draw a diagram to explain how it is possible for this situation to occur.

(b) What other factors could affect Amelia’s mobile phone reception?

Task 3

EE launched the UK’s first 5G service on 30th May 2019. Research this new technology and answer the following questions

(a) How does 5G affect speed and reliability?

(b) Are there any other useful features the technology provides?

(c) What could the implications for individuals and businesses be of 5G?

Task 4

An old block of 20 flats has poor Internet connections for the residents. Currently each flat is served by a 100Mb/s ethernet connection which leads to a central router. This router connects to the Internet with a copper connection running at 70Mb/s. The director of the management company is becoming increasingly frustrated with the number of complaints he is receiving. He has told his IT manager to “install fibre optic connections direct to every flat”.

(a) What are the advantages and disadvantages to this decision?

**Advantages**

**Disadvantages**

(b) Do you agree with the decision to install fibre optic connections direct to every flat? Justify your choice.