Answers

Task 1

Technology has changed significantly since 2000. Complete the following table to show the technological changes that have happened in this millennium. You may need to research some of the categories on the Internet to complete this task.

The first category has been completed for you.

|  |  |  |  |
| --- | --- | --- | --- |
| **Category** | **The previous technology before 2000** | **Technological change** | **What the technological change has led to** |
| **Storage** | Magnetic disks  Typical storage of a hard disk on a PC was around 100MB | Solid state disks  Typical storage in an SD card is 128GB  Typical hard drive storage is 1TB | Solid state storage means that the parts are more robust and can be made smaller. This has been important for portable devices.  A larger storage size has allowed people to store higher quality photos and video. |
| **CPU speed and performance** | Processor speeds of 400MHz  One core | More transistors  Multi-core processors  Speeds up to 4.4GHz  8 cores or more | Processors can run applications and operating systems faster. Processor intensive tasks, such as rendering a film can be carried out faster. Mobile versions of the chips are faster and can run advanced operating systems on a mobile phone. |
| **Internet connectivity** | Typically, in the UK:  Dial-up 33.6kb/s  or ISDN up to 128kb/s | Broadband  Speeds with copper/fibre to the cabinet (FTTC) up to 70MB/s  Even faster speeds through Fibre to the premises (FTTP) | Faster downloads  Streaming of video  Streaming of music  Cloud applications |
| **Connecting a LAN together** | BNC coaxial cable (10Mb/s) or ethernet cables (100Mb/s) | Twisted copper network cables run at 1GB/s or faster  Fibre optic cables for businesses run much faster  Wi-Fi in the 5GHz range at 0.4-1.7 Gb/s (around as fast as ethernet cables) | Networks are capable of transferring data far faster than in 1999.  Use of Wi-Fi has made connecting new devices much easier and allowed Internet connectivity in hotels, cafes and other public places |
| **Personal Area Networks (PANs)** | Analogue connections through 3.5mm connections and a wire (for headphone connections)  USB connections with a wire | Bluetooth | Much easier to connect headphones to a mobile device or television. Also easy to connect a mobile device to a car entertainment system |
| **Mobile Internet** | 2G – this allowed text messages to be sent | 3G,4G,5G | Mobile Internet has allowed access to the real Internet at increasingly fast speeds. The latest standards being tested (5G) were 2.8Gbps |

Task 2

Some new technologies that are already being used or are being developed for the future are:

* Video conferencing
* Computer games
* Robots to do household tasks
* Delivery drones

(a) Choose **one** of these categories or a different category of your choice.

(b) Research the topic. In particular, focus on:

* What hardware and software is used?
* What the affect will be on organisations and individuals?
* What are some interesting facts or statistics about the technology?
* Write notes about your topic below.

Answers will vary depending on the student’s chosen category.

Task 3

Many people are concerned about the increasing use of robots in manufacturing. Discuss whether these concerns are justified.

Many low skilled jobs have been lost by the use of industrial robots e.g. in car manufacture and warehousing.

But many skilled jobs have been created by the use of robots e.g. in their design and programming and supervision.

Robots have increased productivity, leading to increased demand and this has led to new job opportunities.

Many manufacturing jobs have returned to developed countries leading to more job opportunities in those areas. It has also led to increased job demand in the supply chain of those industries.

In countries using a high proportion of robots, productivity has not declined and jobs in the manufacturing industry have not declined.

Task 4

Discuss how technological developments in technology have been used in medicine and affected the ways in which people are treated.

This could include a variety of examples, such as

* Online booking systems for patient use.
* Diagnosis systems for use by medical staff and also by patients.
* Computerised storage of medical records to improve efficiency and communication.
* Scanning devices to image internal organs.
* Checking scans to spot abnormalities.
* Wearable digital devices to monitor patients and communicate the data.
* Surgery using robotic arms.
* Gene mapping and editing.
* Use of 3D printing to produce bones and organs.
* Use of video conferencing to discuss problems with a doctor.

Task 5

Emerging technologies have influenced the daily lives of individuals and the societies in which they live.

(a) Working with a partner, choose **one** of the following categories:

* Communications – e.g. text messaging, email, video calls, instant messaging, VoIP
* Media – HD and 4K video, digital video, video on demand, streaming, digital music, cloud services
* Entertainment – computer games, smart televisions, home cinema systems
* Social media – Facebook, Instagram, Snapchat, YouTube etc

(b) Discuss the impact of these technologies on:

* The ways in which people interact with each other
* Work and employment
* Education
* Leisure

Report your views back to the class.

Answers will vary depending on the student’s chosen category.