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**TOPIC 4. ICT Concepts:**

\* Digital Revolution.

\*Data Processing (data vs information).

\*Digital Devices (types).

\*Hardware Components (component system, clamshell, slate devices).

\*The Issue of E-Waste.

**Topic 4**

1) We are now living in what some people call the digital age, meaning that computers have become an essential part of our lives. They help us to perform mathematical operations; used to access the Internet; to communicate with other people around the world; to give presentations. Schools use word processors to write letters and databases to keep records of students.

Mobiles let you make voice and face-to-face calls and send texts.

In banks, computers store information about the money held by each customer and enable staff to access large databases and carry out financial transactions.

2-3) A computer is an electronic machine, which can accept data in a certain form, process the data, and give the results in a specified format as information.

First, data is fed into the computer’s memory. Then, when the program is run, the computer performs a set of instructions and processes the data. Finally, we can see the results on the screen.

A computer system consists of two parts: hardware and software. Hardware is any electronic or mechanical part that you can see or touch. Software is a set of instructions, which tells the computer what to do.

There are 3 hardware sections: CPU, main memory, peripherals.

The most influential component is the central processing unit. Its function is to coordinate the activities of all the other units. It is the brain of the computer.

The main memory is a collection of RAM chips, which holds the instructions and data, which are being processed by the CPU.

Peripherals are the physical units attached to the computer. They include storage devices(hard drive, DVD, flash memory) and input/output devices(mouse, keyboard, camera/monitor, printer).

4) CPU is built into a single chip. The chip itself called an integrated circuit. The CPU consists of 3 main parts: control unit (interprets each instruction of user’s programs), arithmetic and logic unit (performs mathematical calculations and logical operations), registers (high-speed units of memory used to store and control data).

The power and performance of a computer is determined by the speed of its processor. It is also characterized by system clock. Clock speed is measured in gigahertz.

When the user runs a program, the CPU looks data on the hard disk and transfers a copy into the RAM chips. RAM is volatile. ROM is non-volatile. BIOS uses ROM to control communication with peripherals.

Motherboard is the main circuit board inside system. It contains the CPU, memory chips, expansions slots connected by buses.

Motherboard – the main circuit for CPU. May contain expansion slots.

Clamshell devices have a keyboard as the base and a screen on the hinged cover. The system unit on these devices contains all of the basic components required for input, processing, storage and output.

Slate devices feature a touchscreen that covers most of the device’s surface. The screen can display a virtual keyboard for text and numeric input. An additional control (Home button) is featured on some slate devices. The system unit also includes controls for commonly used features.

5) E-waste – it’s electronic equipment that’s broken and misused. E-waste contains a large list of chemicals that are harmful to people and environment. When electronics are misused during disposal, these chemicals end up in our soil, water and air.

Take into account about where your e-waste ends up. The easiest way to solve the e-waste problem is to produce less e-waste. Instead of throwing away an electronic device, consider selling or gifting it. As a last resort, you can always recycle your e-waste—just make sure you’re doing it correctly!