R W L Integrating skills – Reading, Listening, Writing

Activity 1: Read the following passage and choose the correct option:

What is a microchip?

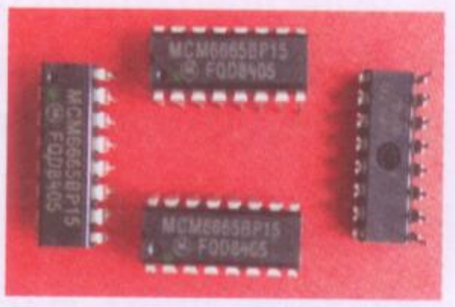
A chip (also called *microchip, computer chip, integrated circuit,* or *IC*) is a small piece of silicon, called *silicon wafer*. Although it is commonly described as flat, in fact it is a multilayered latticework of interconnected shapes. It **(1) consists** / **contains** / **composes** a set of electronic circuits and not only can it **(2) hold** / **bear** / **fit** large quantities of information but it can also perform mathematical and logical operations.

The invention of the chip is one of the most important breakthroughs of mankind. For one thing, it is used in a huge **(3) alloy** / **array** / **layer** of devices from computers to cell phones to toasters. Almost all modern devices, gadgets, and tools are **(4) likely** / **likeable** / **alike** to feature microchip technology. It has also helped miniaturize computer circuitry, allowing for the dramatic shrinking that computer technology has **(5) undergone** / **undertaken** / **underscored** over the last decades since 1958, when the chip was invented. The pioneers **(6) within** / **above** / **behind** microchip technology are Jack Kilby and Robert Noyce. Kilby, the 'Father of the microchip' is also well known as the inventor of the portable calculator (in 1967). Noyce is the founder of *Intel*, the company responsible **(7) of** / **with** / **for** the invention of the microprocessor.

As mentioned above, a microchip is a set of interconnected components, such as transistors, resistors, and capacitors, which are etched or imprinted onto a semiconducting material, such as silicon or germanium, the **(8) former** / **first** / **previous** being the material of choice due to its abundance, low price, and unique properties. On the chip, transistors act as microscopic electrical switches that can turn an electrical current on and off. The current that moves **(9) behind** / **back** / **down** and forth between the transistors is controlled by the resistors. The capacitor collects, stores, and **(10) realizes** / **relieves** / **releases** electricity, while a diode allows current to flow in one direction, but **(11) restricts** / **enables** / **corresponds** its flow in the opposite direction.

Activity 2: How many types of chips do you know of? What are their main differences? Check your answers with the passage below. While you read, match paragraphs A and B with the headlines:

1) Memory chips & 2) Logic chips



Microchips are classified into two major types according to their functionality:

A) _____, the 'brains' of electronic devices, use mathematical operations to process information and perform various tasks. CPUs (Central Processing Units), first designed in the 1960s, are the primary chips in this category. Another chip of this type is the GPU (Graphical Processing Unit), designed specifically to accelerate computer graphics workloads, and the NPU (Neural Processing Unit), designed for deep and machine learning applications.

B) _____ store data and programs on data storage devices. They are of two types: DRAM, which only retain data while the device's power is on, and NOR or NAND Flash, which hold data permanently even after the device is turned off. The basic building block in such a chip is the cell, a tiny circuit with a capacitor and one or more transistors.