

## DW N° 02 (The Motherboard)

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**Exercise 01:** Answer the following questions (tick the correct answer):

1. **A motherboard serves to:**
  - a. Determine the characteristics of a microcomputer.
  - b. Connect all components of the PC, from memory to expansion cards, including disk drives.
  - c. Connect multiple computers in a network around a central unit, also known as a mother unit.
2. **The motherboard determines the type of other computer components.**
  - a. True
  - b. False (if false, provide the correct answer)
3. **Check among these standards which represent a motherboard format:**
  - i. IDE; b) PCI; c) AT; d) ATX; e) USB; f) EISA; g) BTX; h) Mobile-ITX
4. **It is possible to start a computer without a motherboard.**
  - a. True. b. False
5. **A computer can start without BIOS. (if false, provide the correct answer)**
  - a. True. b. False: .....
6. **What is the purpose of the battery located on the motherboard?**
  - a. To keep the BIOS powered continuously
  - b. To keep certain information in memory (Date, time, system information, etc.), an electronic chip called CMOS is continuously powered by a battery.
  - c. To retain a list of all passwords used by the computer.
7. **What is a bus?**
  - a. It is a cable that connects the CD drive to the motherboard.
  - b. It is the ribbon on which the memory card reader is connected.
  - c. It is the set of electronic connections allowing the circulation of data between the processor, RAM, and expansion cards.
8. **How to initialize your BIOS (CMOS)? (Optional question) not mandatory**

**Exercise 02:**

A friend wants to assemble a computer, and he asks you to list the main characteristics for the purchase of the following peripherals:

- Processor
- Hard Disk
- Motherboard

### **Exercise 03:**

Match each word from the following list with one of the provided definitions:

a- Clock	b- Chipset
c- Integrated Circuit	d- RAM
e- Operating System	f- Register
g- Transistor	h- Microprocessor
i- Bus	j- Motherboard
k- Cache Memory	l- North Bridge

1. A small quantity of ultra-fast memory to make frequently requested information immediately accessible to the processor.
2. Small memory contained within the microprocessor intended to temporarily store a certain amount of information such as intermediate results of a calculation or the address of the next instruction to be executed.
3. Type of electronic switch used to control the flow of electric current.
4. Main printed circuit board in a computer.
5. Vibrating quartz crystal at a determined frequency, producing periodic signals used to synchronize tasks of a microprocessor.
6. Type of volatile, readable, and rewritable memory, where each cell is directly accessible.
7. Set of circuits etched on a silicon plate.
8. Deals with interfacing the microprocessor with fast devices (memory and graphics card) requiring high bandwidth.
9. Set of lines carrying signals that allow the microprocessor to communicate with its memories and peripherals.
10. Electronic circuit located on the motherboard responsible for coordinating data exchanges between the various components of the motherboard.
11. Main processing unit of a computer, usually contained in a single integrated circuit.
12. Program necessary for managing the hardware and software resources of a computer.

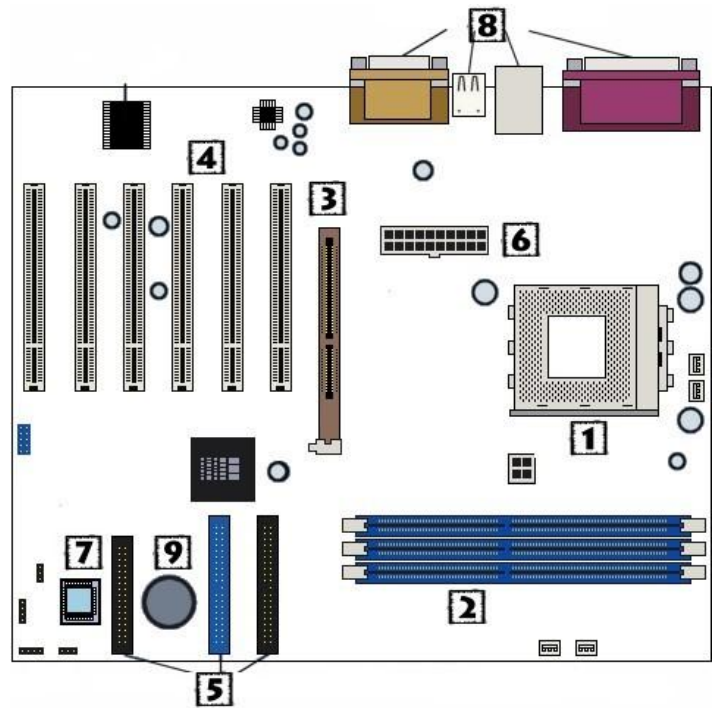
**Question: What is the purpose of BIOS?**

### **Exercise 04:**

- 1) **CMOS and HDMI:** What do the following acronyms stand for and what are they used for?
- 2) What is **RTC**? Explain the mechanism.
- 3) What is the chipset on the motherboard and what is its purpose?
- 4) Provide some motherboard form factors.

**Exercise 05:**

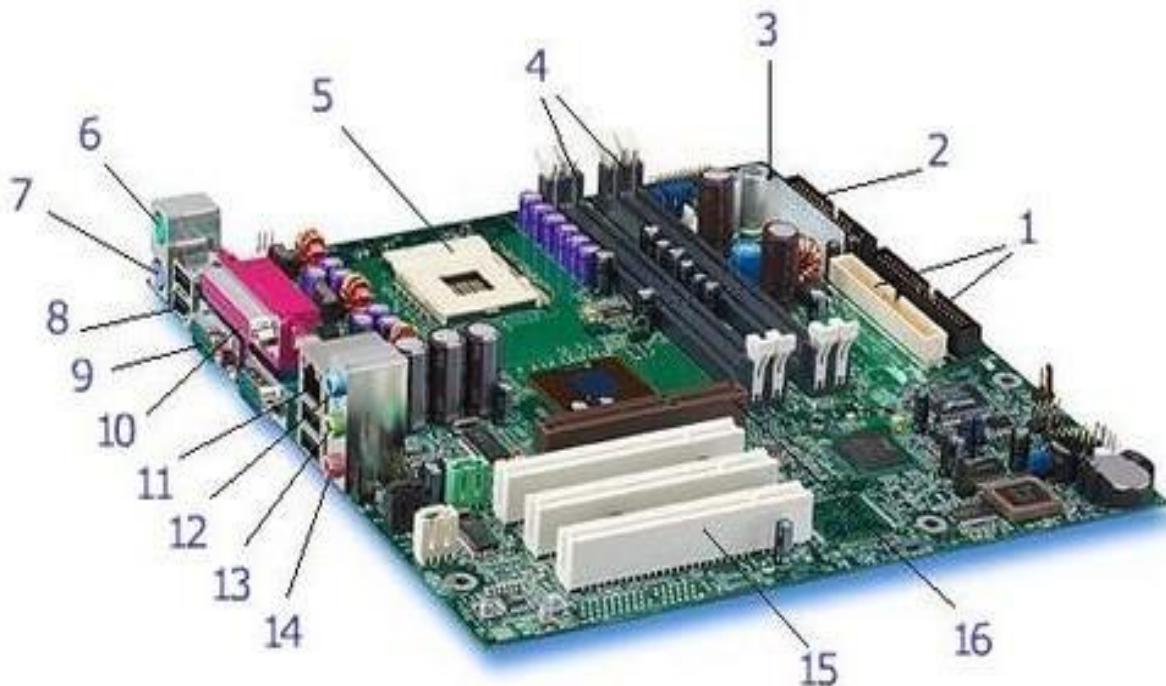
Number	Description
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**Exercise 06 :**

A- Can you identify the components of this motherboard below?

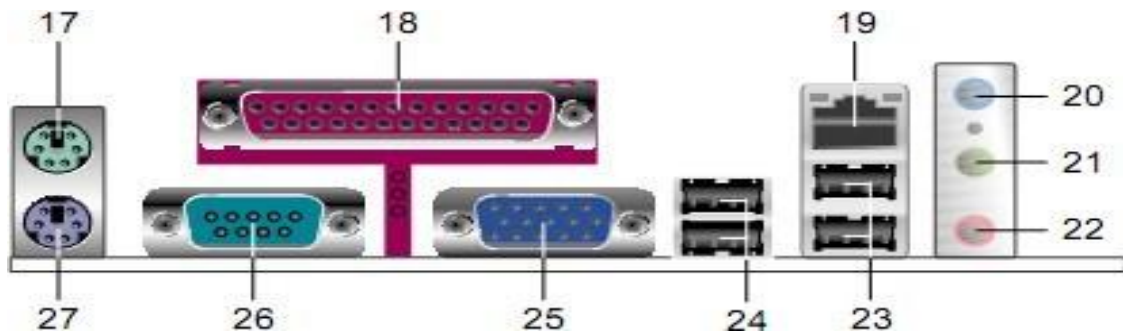
Processor --- RAM --- IDE --- LAN --- Microphone --- Floppy Disk Drive --- Keyboard --- USB Port --- Serial Port --- PS2 Mouse --- Power Supply --- Parallel Port --- Line In (Audio) --- Line Out (Audio) --- AGP Graphics Card --- PCI Expansion Cards .



1	.....	9	.....
2	.....	10	.....
3	.....	11	.....
4	.....	12	.....
5	.....	13	.....
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7	.....	15	.....
8	.....	16	.....

B- Can you identify the components of the back panel?

RJ-45 port -- Line In jack --- PS/2 mouse port ---- Line Out jack --- Microphone jack  
 USB 2.0 ports 3 and 4 ---- Video port ---- USB 2.0 ports 1 and 2 --- Serial port  
 Parallel port --- Keyboard port



17	.....	22	.....
18	.....	23	.....
19	.....	24	.....
20	.....	25	.....
21	.....	26	.....