Institue de Mathématique et
Informatique
Licence Math L1
Module : Electronique, composants des systèmes

TD 2

Chapter 3. Motherboard

Exercice 1 : Motherboard (integrated (or embedded) elements)

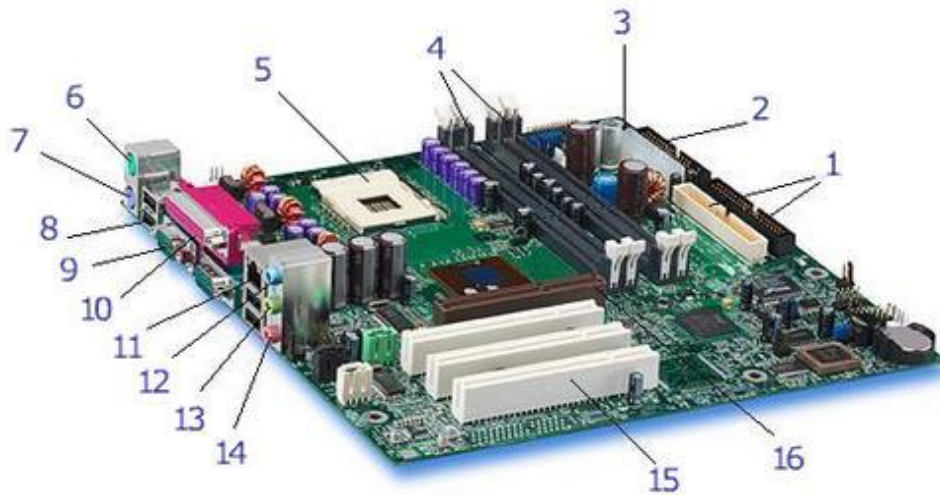Figure 1 presents a motherboard. Complete the table below to indicate their components

Figure 1. an example of a motherboard

Number	component	Number	component
1		9	
2		10	
3		11	
4		12	
5		13	
6		14	
7		15	
8		16	

Exercice 2 : Chipset

2.1. Chipset is an integrated element to motherboard. What does it do ?

2.2. Some computer component are **fast** while other are **slow**. What do bold word mean here ? Give two examples for each type of components.

2.3. A chipset is divided into two parts: Northbridge and Southbridge. What is the difference between these two parts ?

Exercice 3 : Real Time Clock (RTC) & CMOS & BIOS & ROM

Microprocessor support

3.1. RTC is a motherboard component. What does RTC acronym RTC correspond? Describe its role in computer system.

2.2. A RTC produces a clock signal at frequency $f = 1.6\ Ghz$. How many of elementary operations does associated microprocessor do per second ?

3.3. CMOS means Complementary Metal-Oxyde Semiconductor. What does CMOS based circuit do in a computer system, then ?

3.4. BIOS is a microprogram. Give a correct BIOS definition and where the BIOS is stored? What is BIOS setup ?

3.5. What the relationship between CMOS circuit and BIOS ?

Exercice 4 : Microprocessor support

4.1. A microprocessor can have several hundred pins which are used for its connection (its attachment). It is necessary to make a connection carefully. What is the solution to avoid bending any of its pins ?

4.2. A processor heats up during its enormous work (heat production by Joule effect). In case of overheating circuits will be destructed. What is the solution?

Exercice 5 : Motherboard Features and Slots (*connectors*)

5.1. Give signification of following slots and Input-Output connectors acronyms: PCI, AGP, SATA, HDMI, DVI, SATA

5.2. There are cards that can be integrated in motherboard printed circuit. Give three examples of these cards.

5.3. Give three of card formats.