Unit 07. Activities 02

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Updated December 2022

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1. Exercise 01

Make a study (physical characteristics and configuration) of your disk(s) drive(s). Lean on photos (the device itself, the configuration of the BIOS, etc.). Share that information in forum.

2. Exercise 02

A hard drive transfers data at 1.6 Mb/s. If the rotation speed is 5400rpm, how many bytes does it transfer per revolution?

3. Exercise 03

When the manufacturer indicates the hard disk specifications, it is usually used in the CHS terminology, where C is the number of Cylinders, H the number of Heads and S the number of Sectors. Knowing this, can you calculate the capacity in GB of a hard disk with: C = 200 H = 64 S = 40. What if the hard drive indicates that it has 976773169 LBA sectors?

4. Exercise 04

The next table shows part of the technical specifications of a motherboard. Given the specifications, answer the following questions:

- How many hard drives can connect?
- How many SATA drives can connect?
- Can we connect a floppy drive? And two?
- In total, how many internal hard drives can be connected on the plate base? How many optical storage devices can be connected?

Storage Interface	South Bridge
	• 1 x IDE connector supporting ATA- 133/100/66/33 and up to 2 IDE devices • 6 x SATA 3 Gb/s connectors, supporting up to 6 SATA 3Gb/s devices • Support for SATA RAID 0, RAID 1 and RAID 10 **ITE IT8720 chip** • 1 x floppy disk drive connector, supporting up to 1 floppy disk drive

5. Exercise 05

What is DMA? What sense is there in hard drives? Discuss it in forum.

6. Exercise 06

What is the USB HOST mode? Give me an example of use

7. Exercise 07

There are two widely used peripherals, and we have not said anything: the mouse and keyboard. Make a small work indicating what types of keyboards and mice can be found in stores, with their advantages and disadvantages (remember that price is a feature). Do you know if there are new technologies concerning these two peripherals?

8. Exercise 08

A TFT monitor whose native resolution is 1440 x 1280. How many transistors will?

9. Exercise 09

If your computer have 2 MB of video memory, which is the maximum resolution supported if you work with 256 colors? What if you work with 16.7 million colors?

10. Exercise 10

In the class notes, we studied the SATA data connector, but there are variations for it. Make a report on 3 of them showing images, cables, etc.

11. Exercise 11

We have already commented that the SSD suffer a considerable drop in performance when they are full. What is "write amplification"? What does the TRIM about it?

12. Exercise 12

The world of 3D graphics cards is very huge, and understanding the current 3D hardware it complicated. Yet, it is interesting to know the meaning of certain concepts. Look up the meaning of the following concepts: pipelines, blending, anti-aliasing, shading, pov-ray, anisotropic filtering, z-buffer, clipping, render.

Discuss them in forum.