

# INTRODUCTION TO COMPUTER SCIENCE

The test lasts 60 minutes.

**GROUP I**

<b>Surname:</b>	
<b>Name:</b>	
<b>Index No:</b>	
<b>Course</b>	

<b>Number of points:</b>	/22
<b>Note:</b>	

## Part 1 – Theoretical (max. 13 points)

### 1a) Test (max. 7 points)

- Only one answer is correct.
- The answers should be written in the table below, using **CAPTAL LETTERS**.

#### TABLE WITH ANSWERS:

Question	1	2	3	4	5	6	7
Answer							

<b>1. PCI is:</b>			
<b>a)</b> the main system bus connecting the processor with the monitor	<b>b)</b> the main system bus connecting the processor with RAM	<b>c)</b> the interface for connecting external devices	<b>d)</b> the interface for network connections
<b>2. Which memory type offers the largest data capacity:</b>			
<b>a)</b> Hard Disc	<b>b)</b> SD RAM	<b>c)</b> DVD- ROM	<b>d)</b> CD-ROM
<b>3. 1 sector at “Floppy Disc” equals:</b>			
<b>a)</b> 1000 B	<b>b)</b> 1024 B	<b>c)</b> 512 B	<b>d)</b> 1012 B
<b>4. Data transmission in DMA mode is controlled by:</b>			
<b>a)</b> Processor	<b>b)</b> DMA controller	<b>c)</b> Operating system	<b>d)</b> Hard Disc
<b>5. Choose the BIOS program, which fetches the operating system from the hard or floppy disc, loads it into the memory and starts it up:</b>			
<b>a)</b> POST	<b>b)</b> Setup	<b>c)</b> BIOS driver	<b>d)</b> bootstrap loader
<b>6. The main purpose of semantic analysis is:</b>			
<b>a)</b> checking the program grammar	<b>b)</b> checking the proper use of variables	<b>c)</b> checking the algorithm	<b>d)</b> code generation
<b>7. “Big O” notation is used for :</b>			
<b>a)</b> determining algorithm complexity	<b>b)</b> checking partial correctness of algorithms	<b>c)</b> verifying algorithm correctness	<b>d)</b> algorithm description

### 1b) Open question (max. 6 points)

Draw the scheme of a processor and explain, how does it work. Point out the main processor’s parameters. (6 pts.)

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## Part 2 – Calculations (max. 3 points)

**Note!** Please, show your calculations, otherwise no points will be given, even if the result is correct.

- 1) Calculate the number opposite to the given in the binary 2C code:
- a)  $(57)_{10}$  ..... (1 pts.)
- 2) Convert the given integer number **a** from the hexadecimal into the binary code, and real number **b** from the decimal into the binary code.
- a)  $a = (B7)_{16} =$  ..... (1 pts.)      b)  $b = (104.625)_{10} =$  .....(1 pts.)

Worksheet area

