



**Answer all the following questions:**

**1- Answer briefly on the following questions [25 points]**

1. What, in general terms, is the distinction between computer organization and computer architecture?
2. Distinguish Von-Neumann Architecture with a simple drawing.
3. What is the difference between RISC and CISC? Give example for each.
4. Discuss in briefly, the types of ROM.
- 5- Define pipeline.

**2- Choose the correct answer: [10 points]**

- 1- Registers contain data and instructions needed by the CPU.  
a. True                      b. False
- 2- The fetch-decode-execute cycle refers to the process by which data is read from the hard drive and stored in memory.  
a. True                      b. False
- 3- During the execution of a program which gets initialized first?  
a. MDR                      b. IR                      c. PC                      d. MAR
- 4- When we perform subtraction on -7 and -5 the answer in 2's complement form is \_\_\_\_\_.  
a. 11110                      b. 1110                      c. 1010                      d. 0010
- 5- When an instruction is read from the memory, it is called \_\_\_\_\_.  
a. Memory Read cycle.                      c. Fetch cycle.  
b. Instruction cycle.                      d. Memory write cycle.

**3- Answer by explanations the following questions [25 points]**

- 1- Multiply given signed 2'S complement numbers  
A = 1001    multiplicand (-7)    B = 0011    multiplier (+3)
- 2- Consider 4-bit dividend and 2-bit divisor:  
Dividend = 1111    Divisor = 0100
- 3- How to represent a number in IEEE754 32 bit floating point representation. ( 263.3<sub>10</sub>)
- 4- What is the different kinds of addressing modes? With illustration by drawing.
- 5- What are the major functions of I/O system?