



Answer all the following questions:

1-Answer briefly on the following questions [30 points]

1. What in general terms, is the distinction between computer structure and computer function?
2. What are the four main functions of a computer?
3. In relation to computer architecture, what are buses?
4. Discuss in briefly the types of RAM.
5. What is a pipeline hazard? What are their types? Discuss.
6. What are the modes of I/O transfer data?
- 7- Describe the function of the following in the fetch-execute cycle.
 - Program counter
 - The address bus
 - The data bus
 - The decoder
 - The Arithmetic and Logic unit

2- Discuss with illustration by drawing [5 points]

- 1- Distinguish between Von-Neumann Architecture and Harvard Architecture
- 2- The components the Control unit of a basic computer.

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

- 1- Design a 2-bit binary ALU operations due to the following truth table of the control signals.

S1	S2	operation
0	0	A OR B
0	1	A AND B
1	0	A XOR B
1	1	A + B

- 2- Multiply given signed 2'S complement numbers
A = 110101 multiplicand (-11) B = 011011 multiplier (+27)
- 3- Consider 4-bit dividend and 2-bit divisor:
Dividend = 1010 Divisor = 0011
- 4- Add single precision floating point numbers A and B, where
A= 44900000H and B= 42A00000H
- 5- Multiply (-18.25) by (9.5) using IEEE-754 32-bit floating-point format.

مع تمنياتي لكم بالتوفيق والنجاح،،،