Computer Architecture
CE-217

Laboratory Manual

Lab (1): Computer Anatomy

Objectives

- Identify the basic components of computer and their working
- Explain the importance of various units of a computer

Question (1): What are the four basic functions performed by the computer?

1-
2-
3-
4-

Question (2): Choose the correct answer?

(a) The task of performing arithmetic and logical operation is performed by.
(i) ALU (ii) Editor (iii) storage (iv) output

(b) The ALU and CPU are jointly knows as
(i) RAM (ii) ROM (iii) CPU (iv) none of the above

(c) The process of producing results from the data for getting useful information is called?
(i) Output (ii) input (iii) processing (iv) storage

Question (3):

(a) : List four input devices?

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2-
3-
4-

(b) : List four output devices?

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2-
3-
4-

Question (4): What are the major components of computer?

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2-
3-
4-

Question (5): What is CPU and how does it work? Explain briefly?

Question (6): What are the four basic functions performed by the computer?

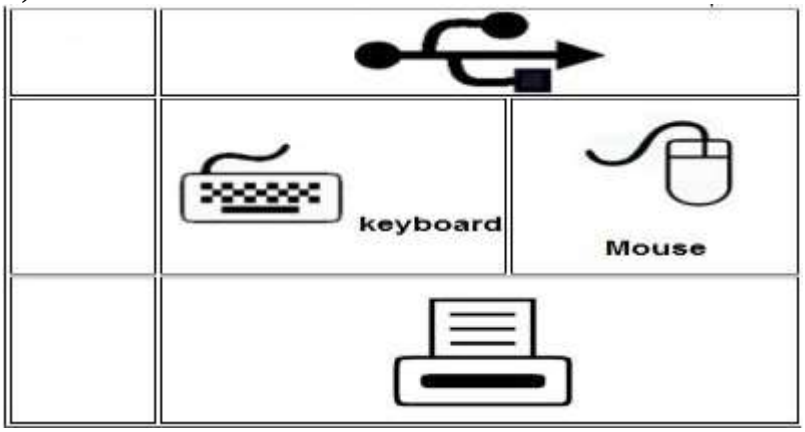
Computer Anatomy part (2)
(Memory and ports)

Objectives

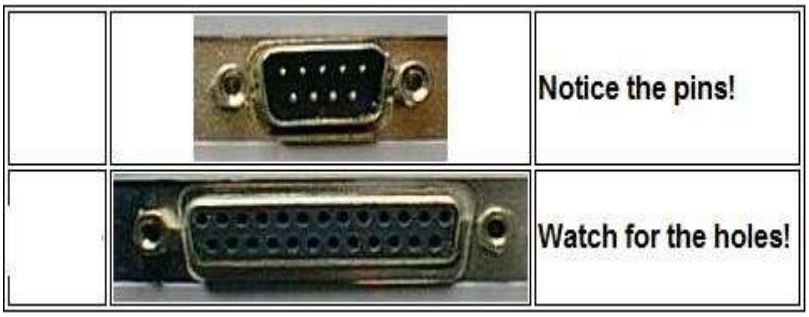
- Identify the ports of computer and their working.
- Explain the types of memory and ports.

Question (1): Fill the tables below by write the suitable ports?

A):



B)



C(

Question (2): Differentiate between the following:

(a) RAM and ROM

(b) DRAM and SRAM

Question (3):

a. Distinguish between bit and byte?

b. Define volatile and non-volatile memory?

Question (4): Write True or False?

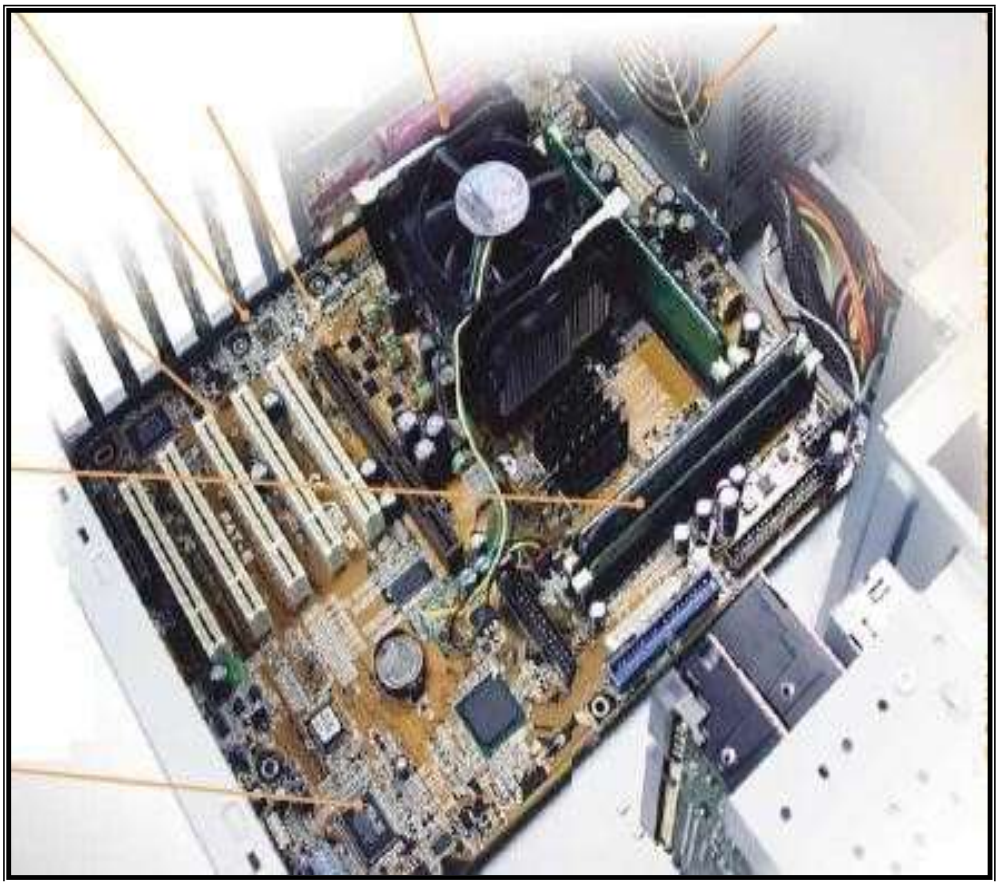
(a) There are two kinds of computer memory: primary and secondary.
(b) The computer can understand decimal system also.
(c) The storage of program and data in the RAM is permanent.
(d) PROM is secondary memory.
(e) The memories which do not lose their content on failure of power Supplies are known as non-volatile memories

Computer Anatomy part (3)
(Motherboard and cards)

Objectives

- Identify the computer components and their functions.
- What is motherboard?

Question (1): Write the parts names of motherboard?



Question (2): Fill in the blanks?

(a) ……. unit coordinates the activities of all the other units in The system.

(b) The standard size of display screen is ..... Lines by ..... Characters.

Question (3): What is Hard Disk?

Question (4): Write Performance parameters of hard disk?

1-

2-

Question (5): What's a Graphics Card?

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Question (6):

a- What is it? - Basic Input Output System

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b- Why is it necessary?

C- List the important Functions of Basic Input Output System?

Question (7): Define the following?

a- Sound Card

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b- Network Interface Card

Lab (2): Numbering systems (part 01)

Objectives

- Review and explain the importance types of numbering systems types.
- Explain the basic operations performed on numbers.

Question (1): find the 1st and 2nd complement of the following decimal values?

a) 154
b) – 413

Question (2):

1. **What is the 3-digit 10's complement of 247?**
   a. Answer:_____
2. **What is the 3-digit 10's complement of 17?**
   a. Answer:_____
3. **777 is a 10's complement representation of what decimal value?**
   a. Answer:_____
4. **What is -20 expressed as an 8-bit binary number in 2's complement notation?**
   a. Answer:_____
5. **1100011 is a 7-bit binary number in 2's complement notation. What is the decimal value?**
   a. Answer:_____

Question (3):

I-**Add 010011112 to 001000112 using signed-magnitude arithmetic**.

II- **Add 100100112 (–19) to 000011012 (+13) using signed-magnitude arithmetic**.

Question (4):

I-Subtract 010011112 to 011000112 using signed-magnitude arithmetic

II-Subtract 011000112 (99) from 010011112 (79) using signed magnitude arithmetic

III-Subtract 100110002 (–24) from 101010112 (–43) using signed-magnitude arithmetic.

Question (5):

I-Express 2310 and 910 in 8-bit binary one's complement form.

II-Add 2310 to –910 using one's complement arithmetic.

III-Express 2310, –2310, and –910 in 8-bit binary two's complement forms.

IV- IV-Add 910 to –2310 using two's complement arithmetic

Question (7):

(a) The 2s complement of (01010)2 is …….

(b) The 2s complement of (0.0010)2 is ……

(c) The 10s complement of (4887)10 is ……...

(d) The 10s complement of (48.87)10 is …….

Lab (2) Registers types (part 02)

Objectives

- Identify computer registers and there functions

Question (1): List types of data registers?

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2-
3-

Question (2): List types of Sections Registers?

1-
2-
3-

Question (3): What are the Differences between AH & AX?