

## Assignment

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Course title : Computer Applications

Mid-Term Summer 2020 B-tech(E)

Q1: Convert the following numbers to the base mentioned?

Ans:

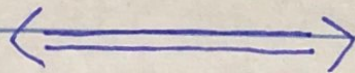
$$(i) (11101)_2 = (29)_{10}$$

$$(ii) (45)_{10} = (101101)_2$$

$$(iii) (B2)_{16} = (10110010)_2$$

$$(iv) (10110111)_2 = (267)_8$$

$$(v) (7423)_8 = (111100010011)_2$$



Q2: (a) What are the building blocks of a computer? Explain with the help of a block diagram.

Ans:

Primary memory:

= = It is volatile memory in order to process any data we have to store it first in primary memory.



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Secondary memory:

In order to store data permanently, we store it in secondary memory.

Control unit:

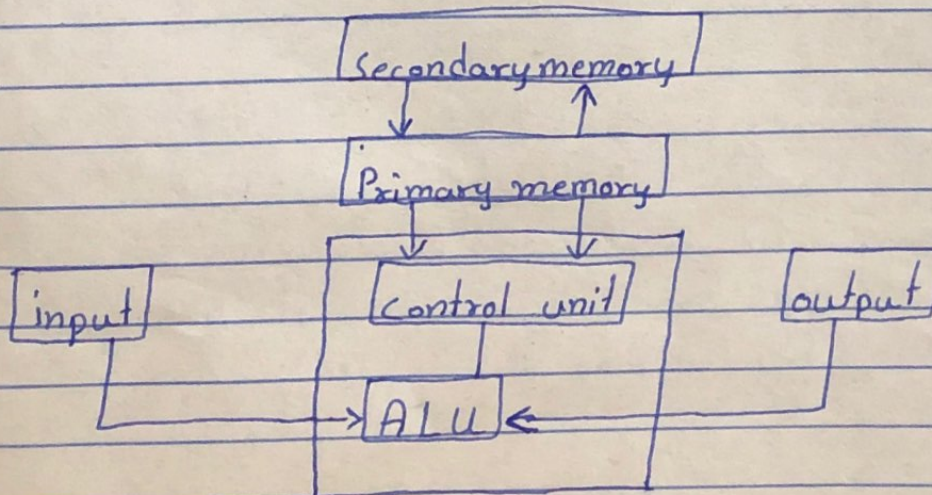
It controls over all flow of computer especially send and receiving signals.

I/O parts:

These are used when we want to enter or extract data from computer.

ALU:

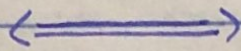
It perform basic arithmetic operation like add, sub, division and multiplication.





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Q2: (b) What are input and output devices. Explain with the help of one example for each?

Ans: Input:

⇒ This is the process of entering data and programs in to the computer system. You should know that computer is an electronic machine like any other machine which takes as inputs raw data and performs some processing giving out processed data. Therefore, the input unit takes data from us to the computer in an organized manner for processing.

Example:- Mouse, keyboard

Output:

⇒ This is the process of producing results from the data for getting useful information. Similarly the output produced by the computer after processing must also be kept somewhere inside the computer before being given to you in human readable form. Again the output is also stored inside the



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Computer for further processing.

Example: Printer, monitor.



Q2: (C) What are types of data processing?  
(Only name those types).

Ans: There are number of methods and techniques which can be adopted for processing of data depending upon the requirements, time availability, software and hardware capability of the technology being used for data processing. These are number of types of data processing methods.

Batch processing.

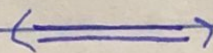
Real time processing.

Online processing.

Distributed processing.

Multiprocessing.

Time sharing.



Q3: (a) Differentiate between the following.

(i) Parallel and series port.

Ans: 1) Serial port is used for serial data transmission while parallel port is used for parallel data transmission.



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2) Transmission speed of a serial port is slow as compared to a parallel port while transmission speed of a parallel port is quite high as compared to a serial port.

3) Bottom up model is better suited as it ensures minimum data redundancy and focus is on reusability while Top-down model has high ratio of redundancy as the size of project increases.

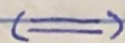


(ii) Volatile and non-volatile memory.

Ans: 1) Data is present till power supply is present while data remains even after power supply is not present.

2) Volatile memory data is not permanent while non-volatile memory data is permanent.

3) Volatile memory is faster than non volatile memory while non-volatile access is slower.



(iii) First generation of computer and Second generation of computer.



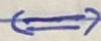
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Ans: 1) In first generation computers vacuum tubes were used as an internal component while in second generation computers transistors were used as an internal component.

2) The size of the first generation computer was very high while the size of the second generation computer was smaller than the first generation called a minicomputer.

3) First generation were a low-speed computer while second generation were ten times faster than first generation computers.



(iv) BCD and ASCII Representation.

Ans: Binary coded Decimal (BCD) as the name implies is a way of representing Decimal numbers in a 4bit binary code. BCD numbers are useful when sending data to display devices for example. The numbers 0 through 9 are the only valid BCD values. Notice in the table that the binary and BCD values are the same for the numbers 0 to 9. When we exceed the



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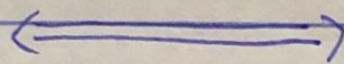
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Value of 9 in BCD each digit in the BCD number is now represented by a 4 bit binary value.

Code

Computers must have some way to represent the common symbols (letters, numbers, and other characters) and store them in memory. ASCII code was developed to do this task. ASCII code tables are easy to find on the internet. A 7 bit ASCII code is the only standardized version of this code.

There are 8 bit ASCII codes but none has been adopted as an official standard. Unicode is a 16 bit extension of ASCII code.



Q3:(b) Represent +156 and -156 in a 16 bit word format.

Ans: +156 = 0000000010011100

-156 = 1111111101100100

