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PROGRAM B.S

SUBJECT INTRODUCTION TO
ICT

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Q No 1 :-

Write a characteristic of computer system. Explain each in details.

Answer:

Basic characteristic of computer system.

1. Speed:-

Computer are much faster to perform mathematical calculation than human. The computer is capable of performing millions of tasks per second. It takes only few seconds for calculation that we take hours to complete.

Computer can perform data processing job very fast, usually measured in microseconds (10^{-6}), nanoseconds (10^{-9}), and picoseconds (10^{-12}).

2. Accuracy:

Accuracy of a computer is consistently high and the degree of its accuracy depends upon its design. Computer errors caused due to incorrect input data or unreliable program are often referred to as Garbage-in-Garbage-out (GIGO).

3. Diligence:

Computer is free from monotony, tiredness, and lack of concentration. It can continuously work for hours without creating an error and without grumbling. Due to this capability it overpowers human being in routine types of work.

4. Versatility:

Computer is capable of performing almost any task, if the task can be reduced to a finite series of logical steps. You may use your computer to prepare payroll slips. Next moment you may use it for inventory management or to prepare electric bills.

5. Power of Remembering:

Computer can store and recall any amount of information because of its secondary storage capability. It forgets or loses certain information only when it is asked to do so.

6. No I.Q.:

Computer is a dumb machine and it cannot do any work without instruction of user. It perform the instruction at tremendous speed and with accuracy. It is you to decide what to do and in what sequence. So computer cannot takes its own decision as you can.

7. No Feeling:-

Computer are devoid of emotions. Their judgement is based on the instruction given to them in the form of program that are written by a human being.

8. Automatic:

Given a job, computer can work on it automatically without human interventions.

Q No 2:

Write a note on each of the following:

1. Machine Learning:

Machine Learning is an application of artificial intelligence (AI) that provides system that ability to automatically learn and improve from experience without being explicitly programmed. Machine Learning focuses on the development of computer program that can access data and use it learn for themselves.

The process of learning being with observations or data, such example, direct experience, or instructions in order look for pattern in data and make better decisions in the future based on the example. The primary aim is to allow the computer learn automatically with human intervention or assistance and adjusted actions accordingly.

2. 5G technology :-

Fifth-generation wireless (5G) is the largest iteration of cellular technology, engineered to greatly increase the speed and responsiveness of wireless networks. With 5G, data transmitted over wireless broadband connection can travel at multigigabit speeds, with potential peak speed as high as gigabits per second (Gbps) by some estimates. These ave. speed exceed wireline network speeds and offer latency of 1 millisecond (ms) or lower, which is useful for applications that require real-time feedback. 5G will enable a sharp increase the amount of data transmitted over wireless system due to more available bandwidth and advanced antenna technology.

C: CPU (Central Processing Unit):

* CPU is the brain of Computer system.

* CPU is responsible for controlling the operation of all other unit of the computer system.

* The CPU is the primary component of a computer that process instruction. it runs the operating systems and applications consistently and receiving input from the user or active software programmes. it process the data and produce output which may store by application and displayed on the screen the CPU contain at least one processor which is the chip inside the CPU actual that perform calculation.

Non-positional Number System.

A non positional number system use a limited no of symbols and which each symbol has a value, how ever position assemble occupies in the number normally bears no relation to its value the value of each system is fixed the remain number system is a good example of non-position number system this number system has a set of symbols.

$$S = \{I, V, X, L, C, D, M\}$$

Characteraritics

* Use ~~sys~~ symbols such as I for 1, II for 2, III for 3, IIII for 4, IIIII for 5 etc

* each symbol represent the same value reganable of its position in the number.

* the symbol are simply added to find out the value of ~~partic~~ particular number.

Q No 3:

Solve the following question

(a) Convert $(110101010)_2$ in
to $()_{10}$

Solve:

$$(110101010)_2 = 1 \times 2^8 + 1 \times 2^7 + 0 \times 2^6 + 1 \times 2^5 + 0 \times 2^4 \\ + 1 \times 2^3 + 0 \times 2^2 + 1 \times 2^1$$

$$= 1 \times 256 + 1 \times 128 + 0 + 64 + 1 \times 32 \\ + 0 \times 16 + 1 \times 8 + 0 \times 4 + 1 \times 2$$

$$= 256 + 128 + 32 + 8 + 2$$

$$(110101010)_2 = (426)_{10}$$

(b) Multiply binary numbers
(10001010) and (10101101)

Solve :

$$\begin{array}{r}
 10001010 \\
 \times 10101101 \\
 \hline
 \textcircled{0} \textcircled{0} \textcircled{0} \textcircled{0} \\
 10001010 \\
 \textcircled{0} \textcircled{0} \\
 00000000x \\
 \textcircled{0} \\
 10001010xx \\
 \textcircled{0} \\
 10001010xxxx \\
 00000000xxx \\
 10001010xxxx \\
 00000000xxxx \\
 10001010xxxx \\
 \hline
 1011101000010
 \end{array}$$