

SUMMER EXAMINATION 2020

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SECTION# B

DEPARTEMENTM BS (SE)

PAPER ICT (COMPUTING FUNDAMENTAL)

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INSTRUCTOR

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(1)

Question#1

ID# 14882

write a characteristic of computer,
Explain Each in details?

ANSWER

⇒ characteristic of computer:-

1) Automatic:-

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

2) Speed:-

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

3) Accuracy:-

↳ Accuracy of a computer is consistently high and the degree of its accuracy depends upon its design.

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Computer errors caused due to incorrect input data or unreliable programs are often referred to as Garbage-in-Garbage-out (GIGO).

4) Diligence:-

↳ Computer is free from monotony, tiredness, and Lack of concentration. it can continuously work for hours without creating any error and without grumbling.

5) Versatility:-

↳ Computer is capable of performing almost any task, if the task can be reduced to a finite series of logical steps.

6) power of Remembering:-

↳ Computer can store and recall any amount of information because of its

Secondary storage capability. it forget or loses certain information only when it is asked to do so.

7) No IQ:-

↳ A computer does only what it is programmed to do, it cannot take its own decision in this regard.

8) No Feelings:-

↳ computers are devoid of emotions. their judgement is based on the instructions given to them in the form of programs that are written by us (human beings).

Question #2

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Write a note on each of the following?

a) Machine Learning:-

↳ Machine Learning

is the study of computer algorithms that improve automatically through experience.

it is seen as a subset of Artificial intelligence.

Machine learning algorithms build a mathematical model based on sample data.

→ History:-

↳ The term machine learning was coined in 1959 by (Arthur Samuel), an American IBMER and pioneer in the field of (Computing gaming) and (Artificial intelligence) its used also Data mining, optimization, statistics, Artificial intelligence.

→ Types of Learning:-

↳ The primary categories of machine learning are supervised, unsupervised, and semi-supervised learning.

→ Machine Learning Goals and outputs:-

↳ Machine learning algorithms are used primarily for the following.

- ✓ Clustering. (unsupervised)
- ✓ Two-class and multiclass classification (supervised).
- ✓ Regression, univariate, multivariate.
- ✓ Anomaly detection.
- ✓ Recommendation system.

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b)

5G:-

- ↳ it is new global wireless standard After 1G, 2G, 3G, and 4G network 5G wireless technology is to deliver high multi-Gbps-peak data speeds. Ultra low latency, more reliability, massive and much more.
- The 5G mobile communications system provides a far higher level of performance than the previous generations.
- The new 5G technologies is not just the next version of mobile comm- evolving 1 to 4G but provides a new approach giving ubiquitous connectivity.
- 5G Able to provide much greater flexibility and therefore it is able to support a much wider range of Applications.

→ How Fast 5G:-

* peak Data Rate:-

↳ 5G will offer significantly faster data speeds, peak Data Rate for 5G sound pretty.

* Latency:-

↳ The time it takes data to travel from one point to another, should be at 4 milliseconds.

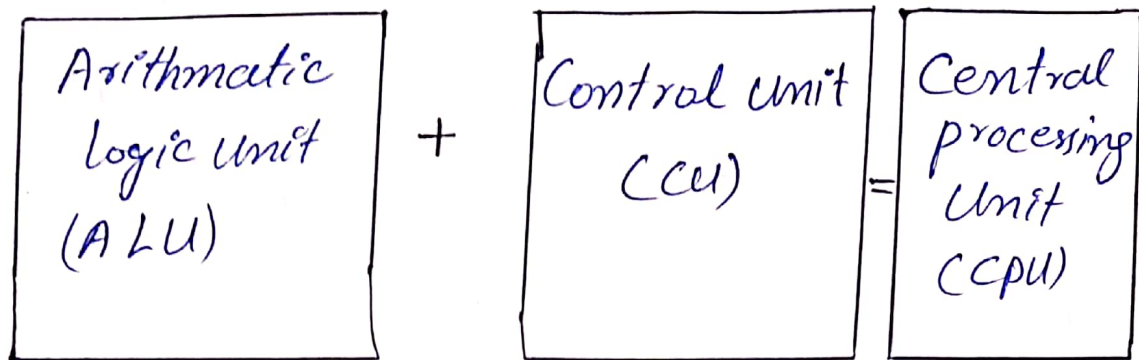
* Efficiency:-

↳ Radio interfaces should be energy efficient when in use.

* Mobility:-

↳ with 5G, base stations should support movement from 0 to 310 mph.

C5) Central Processing Unit (CPU):-



* it is the brain of a computer system.

* it is responsible for controlling the operations of all other units of a computer system.

↳ it is also called central processor, main processor or just processor, the CPU performs basic Arithmetics, logical, controlling, and input/output (I/O) operation specified by the instructions in the program. The computer industry used the term "central processing unit" in 1955.

d) Non-positional Number System:-

✓ Characteristics:-

- * Use symbols such as I for 1, and II for 2, III for 3, IIII for 4, IIIII for 5, etc.
- * Each symbols represents the same value regardless of its positions in the number.
- * The symbols are simply added to find out the value of a particular number.

✓ Difficulty:-

↳ it is difficult to perform Arithmetic with such a number system.

→ A non-positional number a limited number normally bears.

The roman number system is a good Example of non-positional-Numbers.

Question #3

Solve the following questions?

a) Convert $(110101010)_2$ into $()_{10}$

→ Solution:-

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

$$(1 \times 2^5) + (0 \times 2^4) + (1 \times 2^3) + (0 \times 2^2) +$$

$$(1 \times 2^1) + (0 \times 2^0)$$

$$= 256 + 128 + 0 + 32 + 0 +$$

$$8 + 0 + 2 + 0$$

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

Answer

✓ ——— ✓ ——— ✓

b) Multiply binary numbers

10001010 and 10101101

→ Solution:-

Rules

$$0 \times 0 = 0$$

$$1 \times 0 = 0$$

$$0 \times 1 = 0$$

$$1 \times 1 = 1$$

Now



$$\begin{array}{r} 10001010 \\ \times 10101101 \\ \hline 10001010 \\ 00000000 \\ 00001010 \\ 00001010 \\ 00001010 \\ 00000000 \\ 10001010 \\ 00000000 \\ 10001010 \\ \hline 101110101000010 \end{array}$$

THANK YOU SIR