**IQRA NATIONAL UNIVERSITY**

 

 **SUMMER EXAMINATION-2020**

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| **COURSE** | **INTRODUCTION TO ICT (REVISED)** |
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**Question-1:**

**Write a characteristic of Computer. Explain each in details.**

**Answer:**

The following are the main characteristics of computer

1. **Automatic:**

the word computer comes from compute which means calculation. Therefore, computers have the ability to perform and compute tasks automatically without the intervention of human. It is to be noted that computer only perform those tasks which are assigned to it by the user. Once assigned, computer do its job automatically.

1. **Speed:**

Computers are designed to perform tasks such as data processing jobs, lengthy calculations etc. in a swift speed. The speed ranges from few milli microseconds (10-6) to picoseconds (10-12).

1. **Accuracy:**

Computers, while doing their job, consistently have very high accuracy. There is almost zero percent chance that a computer will bring error to the task it is operating unless and until any wrong values are provided to the computer by the user. Such errors caused due to incorrect data are referred to as Garbage-In-Garbage-Out (GIGO).

1. **Diligence:**

Computers are very reliable machines. They do their tasks without any tiredness and lack of concentration. It can work round the clock without asking for a break.

1. **Versatility:**

Computers are versatile machines. A single computer can perform almost every task like calculation, media editing, gaming, data analysis and so on whenever needed.

1. **Power of Remembering**

Computer can store any type of data in abundant amount in its secondary storage and can be recalled whenever needed without any change in its original form. The data stored can be managed like copying, transferring and deleted.

1. **No I.Q:**

Unlike humans, computers are the fastest machines available to date but they have no IQ. They do not take decisions on their own unless and until it is programmed to do so. They only do those tasks which are programmed.

1. **No feelings:**

Computers are machines and they do not have the ability to sense, feel and complain about things. Their judgement and decision taking is based on the instructions provided to them.

**Question-2**

**Write a note on each of the following.**

**Answer:**

1. **Machine Learning:**

The term was first used in 1959 by Arthur Samuel. Machine learning is the study of computer algorithms that improve automatically through experience. These algorithms build mathematical model using sampling data known as training data in order to make predictions. Machine learning involves computers discovering how they can perform tasks without being explicitly programmed to do so. It involves computers learning from data provided so that they carry out certain tasks. For simple tasks assigned to computers, it is possible to program algorithms telling the machine how to execute all steps required to solve the problem at hand; on the computer's part, no learning is needed. For more advanced tasks, it can be challenging for a human to manually create the needed algorithms. In practice, it can turn out to be more effective to help the machine develop its own algorithm, rather than having human programmers specify every needed step. Their applications range from email filtering to computer vision.

1. **5G technology:**

5G stands for fifth generation technology standard for cellular network. In 5G networks, the service area is divided into small geographical areas called cells. The 5G wireless network devices in a cell are connected to the internet and telephone network by radio waves through a local antenna in the cell. The main advantage of 5G over the previous generation network is that they have higher bandwidth which provides higher internet speed both for upload and download. The main reason for the swift speed is that this generation of network used high frequency radio waves which sends and receive data with astonishing speed.

1. **Central Processing Unit (CPU):**

CPU is the principle part of the digital computer system and is considered to the brain of computer. The CPU perform the following operations,

* Logical operations
* Arithmetic operations
* Controlling and Input-Output operations

The control unit of the central processing unit regulates and integrates the operations of the computer. All input data via memory is transferred to the Arithmetic-logic unit where four basic operations like addition, subtraction, division and multiplication is performed along with certain logical operations like NOT, AND, NOR etc. CPU also constitute the physical heart of the entire computer system. To CPU is linked many peripheral equipment, including input-output devices and auxiliary storage units. In modern computers CPU is integrated on a chip called microprocessor.

1. **Non-Positional Number Systems:**

A non-positional number system uses a limited number of symbols in which each symbol has a value. However, the position a symbol occupies in the number normally bears no relation to its value and the value of each symbol is fixed. The roman number system is a good example of non-positional number system. this number system has a set of symbols such as S= {I, V, X, L, C D and so on}. These symbols are simply added to get the value of the particular number. It is to note that it is very difficult to perform arithmetic operations with such numbers.

**Question-3**

**Solve the following questions**

1. **Convert (110101010 )2 in to ( )10.**

**Solution: Binary to Decimal Conversion:**

 **110101010 = (1\*28) + (1\*27) + (0\*26) + (1\*25) + (0\*24) + (1\*23) + (0\*22) + (1\*21)+ (0\*20)**  =256+128+0+32+0+8+0+2+0
 **= (426)10  (Ans)**

1. **Multiply binary numbers 10001010 and 10101101**

**Solution:** Binary Multiplication:

**Binary number 1:** 10001010

**Binary number 2:** 10101101

**B1\*B2=**

