Chapter-9 Overview on Futuristic IT Technology and Cyber Security (English Version)

Q.1:- What is IoT?

Answer:-

IoT stands for an Internet of Things. It is largely a network which can talk to each other the use of the internet as an approach to communicate between them. It includes a wide variety of “smart” devices. From industrial machines that transmit data about the production process to sensors that track information about the human body.

Q.2:- How does the Internet of Things work?

Answer:-

Since the mechanism of IoT devices is highly technical, so for many it is quite confusing how an IoT system actually works. A complete IoT system is made up of four distinct components is made up of four distinct components that work together to deliver the desired output.

- Sensors/devices

- Connectivity
- Data Processing
- User Interface

Q.3:- What are the benefits of IoT?

Answer:-

A. Access to High-Quality Data: Especially marketers and entrepreneurs, data and with the invention of IoT devices.
B. Better Tracking and Management: IoT makes tracking and management a breeze for organization.
C. Efficient Resource Utilization: Be it home, office, hotel or car, IoT facilitates an efficient utilization of assets for improved productivity.
D. Automation and control: Automation is the need of the hour and IoT is renowned for the same. For instance, home appliances such as air conditioner, washing machines, ovens and refrigerators can be automatically get operated.
E. Comfort and Convenience: The interconnectivity of devices and aggregation of data provides you full control over all devices that are connected with each other through the IoT system.
F. Saves Time and Money: IoT not only saves your precious time but also your hard-earned money. For example, if your kitchen electronic appliance has the ability to turn off itself after the task is done; this saves your time and efforts as well as extra expenditure caused by the unnecessary use of electricity.

Q.4:- What are the important components of Internet of Things?

Answer:-

The important components that exist on the internet of Things are as follows:

A. Hardware: This will make physical items responsive and give them functionality to store records and resounds to instructions.
B. Software: It allows the facts collection such as storing, processing, manipulating and instructing.
C. Infrastructure: Infrastructure which consists of protocols and technologies which allow two bodily gadgets to exchange information.

Q.5:- What does Big Data Analytics mean?

Answer:-

The term Big data analytics refers to the strategy of analyzing large volumes of data, or big data. The large amount of data which grouped a wide verity of sources, including a wide variety of sources, including social network, videos, digital images, sensors and sales transactions record is called Big Data. The main purpose is analyzing all this data is to uncover patterns and connections that might otherwise be invisible, and that might provide valuable insights about the users who created it.

Q.6:- Why is big data analytics important?

Answer:-

The most important advantages of Big Data analysis are that it helps organizations harness their data and use it to identify new opportunities. With the help of this, companies lead to smarter business, more efficient operations, higher profits and happier customers.

Q.7:- List some tools used for Big Data?

Answer:-

There are various tools in Big Data technology which are deployed for importing, sorting, and analyzing data.

Some tools are as follows:

A. Apache Hive
B. MongoDB
C. MapReduce
D. Apache Sqoop
E. Apache Pig
F. Apache Hadoop

Q.8:- What are the sources of unstructured data in Big Data?

Answer:-

The sources of unstructured data are as follows:

A. Text files and documents
B. Server website and application log
C. E-mails
D. Social media Data
E. Images, videos and audio files

Q.9:- What is Cloud Computing?

Answer:-

Cloud computing is a new age computer technology that is internet base. It is the next generation technology that utilized the web-based clouds to provide the services whenever the user needs it.

Q.10:- Who is Cloud?

Answer:-

A cloud is an amalgamation of hardware, network, services, and storage and interfaces that aid in delivering computing as a service. It has three users:

A. End users
B. Business management users
C. Cloud service provider

The end users are the one who use the services provided by the cloud. The business management user in the cloud takes the responsibility of the data and the services provided by the cloud. The cloud service provider is the one who takes care or is responsible for the maintenance of the IT assets of the cloud. It acts as a common center for its users to fulfill their computing needs.

Q.11:- What is the basic characteristic of cloud computing?

Answer:-

The four basic characteristics of cloud computing is given as follows:

A. Elasticity and scalability
B. Self-Service provisioning and automatic de-poisoning
C. Standardized interfaces
D. Billing self-service based usage model.

Q.12:- How can a company benefit from cloud computing?

Answer:-

A. More secure data backup and data storage.
B. Software as a service
C. Take advantage of powerful server capabilities without hardware investment
D. Better positioning for growth and scale
E. Increased productivity
F. Cost-effectiveness

Q.13:- What is a virtual Reality?

Answer:-

VR is a realistic three dimensional images (3D image) or artificial environment. It is created with a mixture of interactive hardware and software and presented to the user in such a way that the any doubts are suspended. It is accepted as a real environment in which it is interacted with in a seemingly real or physical way.

Q. 14:- What are the different types of VR?

Answer:-

A. Immersive virtual reality
B. Non-Immersive systems
C. Semi-Immersive projection systems

D. Fully immersive head-mounted display systems
E. Enhanced Reality
F. Desktop Virtual reality
G. Projection virtual reality
H. Simulation virtual reality

Q.15:- What is the difference between strong and weak artificial Intelligence?

Answer:-

Weak AI	Strong AI
Narrow application, with very limited scope	Widely applied, with vast scope.
Good at specific tasks.	Incredible human-level intelligence.
User supervised and unsupervised.	User clustering and association to.
Learning to process data.	Process data.
For example: Siri, Alexa, and so on.	For example: Advanced Robotics.

Q.16:- List some Applications of AL?

Answer:

A. Natural language processing
B. Chat bots
C. Sales prediction
D. Self-driving card
E. Facial expression recognition
F. Image tagging

Q.17:- What is Block chain?

Answer:

It is an incorruptible digital ledger of economic transactions that can be programmed to record not only financial transactions but virtually everything of value. In simple terms, it is a decentralized distributed database of immutable records that are managed by a group of computers but not owned by any single entity. It is stored as a database or a flat-file.

Q.18:- How does block chain work?

Answer:

It consists of immutable records of data called clock with are linked using cryptography. It is nothing but a process to encrypt and secure data communication from third parties in reading private messages. Once the data has been recorded, it will not be changed. It works like a digital notary with timestamps to avoid tampering of information.

Q.19:- Define encryption and why it is used?

Answer:

It is a process of converting the data of file into an unreadable format to protect the data from attack. It is being widely used in an organization to secure their data.

Q.20:- What are the key terms of Security?

Answer:

The key terms for security are Confidentiality, Integrity and Availability. It is also known as CIA. There three things are considered to be the most important components of the security. Confidentiality means protecting the information and the information remains between the client and organization, and not sharing the information with other people. Integrity means the reliability and trusted data, which refers to real and accurate data. Availability refers to access information from the specified location.