ONLINE
SUPPROT SERVICES

CERTIFICATE IN
INFORMATION TECHNOLOGY

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ADVANCED TRENDS IN IT:

MOBILE INTERNET:

Mobile internet is an internet connection through 2G or 3G or 4G mobile phone networks. This is opposed to ADSL (phone line) or cable (fibre-optic) broadband. Thus we can say that Mobile internet uses mobile phone. No routers, cables or telephone lines are needed.

Mobile internet gives us access to our favourite social communities like Facebook mobile, Whatsapp etc. Besides these, we can also access to news, sports, and entertainment using internet mobile. We can also search with Yahoo! Search and Google, and access any type of information.

GPS:

The Global Positioning System (GPS) is a space-based radio-navigation system. Initially it was owned by the United States government and operated by the United States Air Force. It is a global navigation satellite system that provides geo-location and time information to a GPS receiver anywhere.

The GPS system does not require the user to transmit any data. It operates independently of any telephonic or internet reception. The GPS system provides critical positioning capabilities to military, civil, and commercial users around the world. In simple words, GPS stands for Global Positioning System by which anyone can always obtain the position information anywhere in the world.

3G AND 4G

G in 2G, 3G and 4G stands for the "Generation" of the mobile network. Today, mobile operators have started offering 4G services in the country. A higher number before the 'G' means more power to send out and receive more information.

As the name would suggest, 1G was the first generation of mobile networks. Here basically, radio signals were transmitted in 'Analogue' form. Using it, we could send simple text messages and making voice calls. 2G networks were based on narrow band digital networks. Signals were transmitted in the digital format and it improved the quality of calls.

The 3G of mobile networks allow users to access the Internet over devices like mobiles and tablets. The speed of data transmission on a 3G network ranges between 384 KBPS to 2 MBPS. This means a 3G network actually allows for more data transmission. 3G networks enables us to do voice and video call, file transmission, internet surfing, online TV, view high definition videos, play games and much more.

4th Generation mobile networks provide us many value added features. In addition to all the 3G facilities, data transmission speed of 4G ranges between 100MBPs to 1GBPS.

WIFI

Wi-Fi is the name of a popular wireless networking technology. It uses radio waves to provide wireless high-speed Internet and network connections. WIFI devices are based on the IEEE 802.11 standards. Devices that can use Wi-Fi technology include personal computers, phones and tablets, smart TVs, and modern printers. Wi-Fi compatible devices can connect to the Internet via a WLAN and a wireless access point. Such an access point (or hotspot) has a range of about 20 meters (66 feet) indoors and a greater range outdoors.

BLUETOOTH

Bluetooth is a wireless technology standard for exchanging data over short distances from fixed and mobile devices. This data exchange takes place using short-wavelength UHF radio waves. Bluetooth technology was invented by telecom vendor Ericsson in 1994.

Bluetooth is one of the major wireless technologies developed to achieve WPAN (Wireless Private Area Network). Bluetooth technology is generally used to connect devices of different functions such as telephones, computers (laptop or desktop), notebooks, cameras, printers and so on.

CLOUD COMPUTING:

In the simplest terms, cloud computing means storing and accessing data and programs over the Internet instead of your computer's hard drive. The word Cloud in the term Cloud Computing is just a representation for the Internet. Following are a few of the things that we can do with the cloud:

- Create new apps and services
- Store, back up and recover data
- Host websites and blogs
- Stream audio and video
- Deliver software on demand
- Analyse data for patterns and make predictions

VIRTUAL - LAN:

A virtual local area network (VLAN) is a logical group of workstations, servers and network devices. They appear to be on the same LAN despite of their geographical distribution. A VLAN allows a network of computers and users to communicate in a simulated (virtual) environment as if they exist in a single LAN. VLANs are implemented to achieve scalability, security and ease of network management. VLAN can quickly adapt to changes in network requirements.

The purpose of implementing a VLAN is to improve the performance of a network or apply appropriate security features. Traffic patterns can also easily be controlled by using VLANs.

The **key benefits** of implementing VLANs are:

- Allowing network administrators to apply additional security to network communication
- Making expansion of a network easier
- Providing flexibility because administrators are able to configure in a centralized environment while the devices might be located in different geographical locations
- Offers increased performance

VLANs also have some **limitations** as listed below:

- High risk of virus issues because one infected system may spread a virus through the whole logical network
- In a very large networks, additional routers might be needed to control the workload

FIREWALL

A firewall is a network security device. It monitors incoming and outgoing network traffic and decides whether to allow or block specific traffic. This decision is taken based on a defined set of security rules. Firewalls have been a first line of defence in network security for over 25 years. They establish a barrier between secured and trusted internal networks and untrusted outside networks, such as the Internet.

We could think of a firewall as a security guard that decides who enters or exits a building. Firewalls are commonly used to prevent unauthorized access. A firewall can be hardware, software, or both.

E-COMMERCE:

E-Commerce is buying and selling of goods and services on the internet. E-Commerce is the act of doing business electronically. This means that all our transactions are paperless. All operations are done electronically such as EDI (Electronic Data Interchange), electronic mail, electronic fund transfers (EFT). Thus, e-commerce allows the company to do its business electronically, in essence having an electronic shop. Products can be advertised, sold and paid for electronically.

E-Commerce allows visitors to access our website. Visitor can go through virtual catalogue of our product and services online. When the visitors want to buy something they can add it to their virtual shopping basket. These items can be added or deleted any time. Finally customer can move to the virtual checkout counter. Now it will ask customer for name, address etc. Then it will ask methods of payments such as credit cards, debit cards, internet banking etc. Once all the information is entered, the buying and selling procedure is completed.

The concept of E-Commerce is suited to only those products or services that appear more suitable for online sales such as digital products, music, movies, education, communication, software etc.

M COMMERCE

M-Commerce stands for Mobile Commerce. It can be defined as the sales of goods and services via mobile devices such as Smart Phones and Personal Digital Assistants (PDAs). It is also known as a next-generation e-commerce. M-Commerce enables users to access the Internet without needing to find a place to plug in. M-Commerce technology is based on the Wireless Application Protocol (WAP). However, mobile commerce can be seen as a part of ecommerce. It is still about doing transactions via digital means.

NANOTECHNOLOGY

Nano-technology is science, engineering, and technology conducted at the Nano-scale, which is about 1 to 100 Nano-meters. In other words, it is the study and application of extremely small things. This technology can be used across all the other science fields, such as chemistry, biology, physics, materials science, and engineering.

The ability to see Nano-sized materials has opened up a world of possibilities in many industries and scientific activities. Nanotechnology is essentially a set of techniques that allow manipulation of properties at a very small scale. It can have many applications, such as Drug delivery, Fabrics, Reactivity of Materials, Micro/Nano Electro-Mechanical Systems, and Molecular Manufacturing etc.

VIRTUAL REALITY:

Virtual reality is an artificial environment. It is created with software and presented to the user in such a way that the user suspense belief and accepts it as a real environment. On a computer, virtual reality is primarily experienced through two of the five senses: sight and sound. The simplest form of virtual reality is a 3-D image. Virtual reality can be applied for:

- The simulation of a real environment for training and education. For example, for pilot and battle training.
- The development of an imagined environment. For example, for a game or interactive story.

The Virtual Reality Modelling Language (VRML) can be used to develop Virtual Reality Systems.

BPO AND KPO:

BPO stands for **Business Processing Outsourcing**. BPO means getting a business process implemented using the channel of outsourcing. BPO is the business that focuses on business tasks. These tasks range from manufacturing products to providing customer care. It usually consists of the back office or front office operations. It is a process where a number of people are working for a specific business. Data entry, call centres are some examples of BPO operations. Following is the list of common services that are provided by BPO industry:

- Customer Support Services
- Technical Support Services
- Telemarketing Services
- Employee IT Help-desk Services
- Insurance
- Processing Data Entry Services
- Data Conversion Services Scanning,
- Book Keeping and Accounting

KPO stands for **Knowledge Process Outsourcing**. KPO means outsourcing a process which requires processing of knowledge. KPO is the latest outsourcing process. It involves the application of training and expertise to research, data analysis, and other information-based activities. KPOs are usually more specialized and knowledge based. It requires a lot of R&D (Research and Development) services. The services like capital and insurance market services, legal services, biotechnology, etc., are also the usual activities in KPOs.

India and Eastern Europe Countries are particularly famous in Knowledge Process Outsourcing. KPO provides great quality work. It also delivers everything on-time with uninterrupted services. Some of common KPO services are listed below:

- Analytics
- Business Research
- Design & Animation
- Engineering Service Outsourcing (ESO)
- Financial Research Outsourcing (FRO)
- Legal Process Outsourcing (LPO)
- Marketing Services
- Market Research Outsourcing (MRO)
- Publishing Outsourcing

Both, BPO and KPO, help businesses to streamline their operations. These services make businesses very cost effective.

ONLINE SHOPPING:

The process of purchasing goods and services over the Internet through the use of a web browser is referred to as **online shopping**. Consumers can purchase items without going to market. Today, almost anything can be purchased through online shopping.

Now a day, online shopping has become a popular shopping method. There are many advantages of online shopping. Following are some of the common advantages of online shopping:

Advantages of Online Shopping

- **Save Time - it saves customers time** as there is no need to go to market for purchasing goods.
- **Save Fuel –** there is no need for vehicles, so no purchase of fuel necessary.
- **Save Energy –** In online shopping, we do not need to waste our valuable energy when buying.
- **Comparison of Prices –** We can easily check prices and compare with just a few clicks.

- **24/7 Availability –** We can purchase things any time of the day. Online shopping stores are open round the clock of 24/7, 7 days a week and 365 days.
- **Easy to search merchandise we want to buy**

SOCIAL MEDIA

Social Media is an internet-based media. It is used to create and share ideas and information. We can also collaborate with people with the help of Social Media. It is a platform where people come close virtually and the world looks connected within no time.

A Social Media website must have a few characteristics like User accounts, Participation, Profile Pages, Friends or followers, Community, Notifications, Ways to review the contents, etc. Examples of some Social Media of present times include – Facebook, Twitter, LinkedIn, Pinterest, Instagram, Youtube, Google+ etc. Now a days, Social Media has become a medium for self-express.

Here are some examples of social media:

- **Facebook** is a popular free social networking website. It allows registered users to create profiles, upload photos and video, send messages and keep in touch with friends, family and colleagues.
- **Twitter** is a free micro-blogging service. It allows registered members to broadcast short posts. These posts are called tweets. Twitter members can broadcast tweets and follow other users' tweets.
- **Google+** is Google's social networking project. It is designed to replicate the way people interact offline more closely. The project's slogan is "Real-life sharing rethought for the web."
- **LinkedIn** is a social networking site. It is designed specifically for the business community. The goal of the site is to allow registered members to establish and document networks of people.
- **YouTube is a video sharing service where users can watch, like, share, comment and upload their own videos.** The video service can be accessed on PCs, laptops, tablets and via mobile phones.
  The main functions of YouTube are:
  - Users can search for and watch videos
  - Create a personal YouTube channel
  - Upload videos to your channel
  - Like/Comment/share other YouTube videos
  - Users can subscribe/follow other YouTube channels and users
  - Create playlists to organize videos and group videos together