

Cover all definition

# Information Technology

**All Definition Is Tried Cover In The Notes It Cover About 10 Marks Of IT Paper**

## Information Systems and IT Fundamentals

- (a) **Multiprocessing:** **Multiprocessing** is the use of two or more Central Processing Units (CPUs) within a single computer system to allocate tasks between them.
- (b) **Hardware Virtualization:** **Hardware Virtualization** or **Platform Virtualization** refers to the creation of a virtual machine that acts like a real computer with an operating system. Software executed on these virtual machines is separated from the underlying hardware resources.
- (c) **Cloud Computing:** Cloud computing is the use of various services, such as software development platforms, servers, storage, and software, over the Internet, often referred to as the "cloud."
- (d) **Groupware:** **Groupware** also known as Team-ware, Collaboration Software is software that allows collective and collaborative working of teams from different geographical locations on an online and real-time basis.
- (e) **Computer Bus:** Computer Bus is a communication system that transfers data between components inside a computer, or between computers that covers all related hardware components (wire, optical fiber, etc.) and software, including communication protocol.
- (f) **Memory Controller:** Memory Controller is a digital circuit which manages the flow of data going to and from the main memory and can be a separate chip or integrated into another chip.
- (g) **Direct Memory Access (DMA):** Direct Memory Access (DMA) is a feature of modern computers that allows certain hardware subsystems within the computer to access system memory independently of the Central Processing Unit (CPU).

### Short notes

**Bluetooth:** Bluetooth is a wireless technology standard for exchanging data over short distances up to 50 meters (164 feet) from fixed and mobile devices, creating personal Area Networks (PANs) with high levels of security. Bluetooth is like a very low-power, short-range radio signal which is secure from the moment they're sent, so unlike any other wireless network we don't have to worry about turning on security. Few devices that utilize Bluetooth technology are Keyboards and mice, Printers, mobile phones and headsets, PDAs (Personal Digital Assistants), Desktop and laptop computers, Digital cameras, and Remotes. Through the use of a mobile phone with Bluetooth enabled; we can send pictures, videos, exchange business cards and also transfer files to our PC. Both data and voice transmissions can be sent and received through the use of short range networks.

- (b) **Wi-Fi:** Wi-Fi is a popular wireless networking technology that uses radio waves to provide wireless high-speed Internet and network connections. Wi-Fi networks have limited range. A typical wireless access point might have a range of 32 meters (120 ft.). Wi-Fi can be less secure than wired connections because an intruder does not need a physical connection. Wi-Fi networks use radio technologies called 802.11 to provide secure, reliable, fast wireless connectivity. A Wi-Fi network can be used to connect electronic

devices to each other, to the Internet, and to wired networks (which use Ethernet technology). Wi-Fi networks work well for small businesses providing connectivity between mobile salespeople, floor staff and behind-the-scenes finance and accounting departments.

(c) **Tablet:** A Tablet computer, or simply tablet is a one piece general-purpose computer contained in a single panel. Its distinguishing characteristic is the use of a touch screen as the input device. Tablet PCs have extreme portability, easy to use interfaces and the wide range of ways they can be used. Some features of Tablets are as follows:

- ◆ **Input Method:** Tablets rely solely on a touch interface on the screen for all input.
- ◆ **Size:** Tablets have the size roughly of a small pad of paper and a weight that is less than one Kg.
- ◆ **Battery Life:** Tablets are designed for efficiency because of the low power requirements of their hardware components. Tablets can achieve all day usage.
- ◆ **Storage Capacity:** Most tablets come with configurations that allow between 16 and 64 gigabytes of storage.
- ◆ **Performance:** Most tablet PCs are based on extremely low powered processors more suited for tasks like email, web browsing, playing video or audio.
- ◆ **Software:** The two major tablet platforms are Android and iOS amongst plenty of applications that are available.
- ◆ ☐ **Wireless:** Because tablets by design are mobile computers; most of them have Wi-Fi, blue tooth and mobile connectivity.

(d) **SmartPhone:** A SmartPhone is a mobile phone built on a mobile operating system with more advanced computing capability connectivity than a feature phone. This handheld device integrates mobile phone capabilities with the more common features of a handheld computer or PDA. Smartphone allows users to store information, e-mail and install programs, along with using a mobile phone in one device. Modern Smartphones also include high-resolution touch screens and web browsers that display standard web pages as well as mobile-optimized sites. High-speed data access is provided by Wi-Fi and mobile broadband.

(e) **Touchpad:** A Touchpad is a pointing device featuring a tactile sensor, a specialized surface that can translate the motion and position of a user's fingers to a relative position on screen. Touchpad is a common feature of laptop computers, can also be found on Personal Digital Assistants (PDAs) and some portable media players.

(f) **Notebook:** Notebook is an extremely lightweight personal computer that typically weigh less than 3 Kg and are small enough to fit easily in a briefcase. Notebook computers use flat-panel technologies to produce a lightweight and non-bulky display screen. Modern notebook computers are almost equivalent to personal computers having the same CPUs, memory capacity and disk drives.

(g) **Cache Memory:** Cache Memory (pronounced as cash) is a smaller, faster memory which stores copies of the data from the most frequently used main memory locations so that Processor/Registers can access it more rapidly than main memory. It is the property of locality of reference, which allows improving substantially the effective memory access time in a computer system.

(h) **Virtual Memory:** Virtual Memory is an imaginary memory area supported by some operating systems (for example, Windows) in conjunction with the hardware. If a computer lacks the Random Access Memory (RAM) needed to run a program or

operation, Windows uses virtual memory to compensate. Virtual memory combines computer's RAM with temporary space on the hard disk. When RAM runs low, virtual memory moves data from RAM to a space called a paging file. Moving data to and from the paging file frees up RAM to complete its work. Thus, Virtual memory is an allocation of hard disk space to help RAM.

- (i) **Instruction Set Architecture (ISA):** It is the abstract model of a computing system that is seen by a machine language programmer, including the instruction set, memory address modes, processor registers, and address and data formats. Instruction Set Architecture (ISA) is related to the programming of a computer – that is, how the computer understands, what each ~~element in its basic language means, what instructions are to be carried out and in what order,~~ etc. The ISA basically deals with what the chip does.

(j) **Micro architecture:** It, also known as Computer organization, is a lower level detailed description of the system that is sufficient for completely describing the operation of all parts of the computing system, and how they are inter-connected and inter-operate in order to implement the ISA. The Micro architecture can be seen as how the ISA does and what it does. It is the term used to describe the resources and methods used to achieve architecture specification. The term typically includes the way in which these resources are organized as well as the design techniques used in the processor to reach the target cost and performance goals. The micro architecture essentially forms a specification for the logical implementation.

**"Kind words can be short and easy to speak, but their echoes are truly endless."**

**~ Mother Theresa**

## Telecommunication and Networks

- (a) **Network Interface Card (NIC)** – Network Interface Card (NIC) is a computer hardware component that connects a computer to a computer network. It has additional memory for buffering incoming and outgoing data packets, thus improving the network throughput.
- (b) **MODEM** – A MODEM is a device that converts a digital computer signal into an analog telephone signal (i.e. it modulates the signal) and converts an analog telephone signal into a digital computer signal (i.e. it demodulates the signal) in a data communication system.
- (c) **Multiplexer** – A multiplexer is a communication processor that allows a single communication channel to carry simultaneous data transmissions from many terminals. A multiplexer merges the transmission of several terminals at one end of a communication channel while a similar unit separates the individual transmissions at the receiving end.
- (d) **Internetwork Processors** – Telecommunication networks are interconnected by special-purpose communication processors called internetwork processors such as switches, routers, hubs, bridges, repeaters and gateways.
- (e) **Switch** – Switch is a communication processor that makes connections between telecommunication circuits in a network so that a telecommunication message can reach its intended destination.
- (f) **Router** – Router is a communication processor that interconnects networks based on different rules or protocols, so that a telecommunication message can be routed to its destination.

- (g) **Hub** – Hub is a port-switching communication processor. This allows for the sharing of the network resources such as servers, LAN workstations, printers, etc.
- (h) **Bridge** – Bridge is a communication processor that connects number of Local Area Networks (LAN). It magnifies the data transmission signal while passing data from one LAN to another.
- (i) **Repeater** – Repeater is a communication processor that boosts or amplifies the signal before passing it to the next section of cable in a network.
- (j) **Gateway** – Gateway is a communication processor that connects networks and use different communication architectures.
- (k) **Server** – A server is one or more multi-user processors with shared memory providing computing, connectivity and the database services and the interfaces relevant to the business need.
- (l) **Protocol** – A protocol is the formal set of rules for communicating, including rules for timing of message exchanges, the type of electrical connection used by the communications devices, error detection techniques, means of gaining access to communications channels, and so on.
- (m) ☐ **SSH** – Secure Shell is a program to log into another computer over a network, to execute commands in a remote machine, and to move files from one machine to another. It provides strong authentication and secure communications over insecure channels. SSH protects a network from attacks such as IP spoofing, IP source routing, and DNS spoofing. An attacker cannot play back the traffic or hijack the connection when encryption is enabled. During ssh login; the entire login session including transmission of password is encrypted; therefore it is almost impossible for an outsider to collect passwords.
- (n) ☐ **SFTP** – The SSH File Transfer Protocol (also known as Secure FTP and SFTP) is a computing network protocol for accessing and managing files on remote file systems. Unlike standard File Transfer Protocol (FTP), SFTP encrypts commands and data both, preventing passwords and sensitive information from being transmitted in the clear over a network.
- (o) ☐ **HTTPS** – HyperText Transfer Protocol Secure (HTTPS) is a communication protocol for secure communication over a computer network with especially wide deployment on the Internet. The security of HTTPS uses long term public and secret keys to exchange a short term session key to encrypt the data flow between client and server.
- (p) ☐ **SSL** – It is a protocol that provides a secure channel between two machines operating over the Internet or an internal network. It is typically used when a web browser needs to securely connect to a web server over the inherently insecure Internet. In practice, SSL is used to secure online credit card transactions system logins and any sensitive information exchanged online; to secure the connection between an email client such as Microsoft Outlook and an email server such as Microsoft Exchange, to secure intranet based traffic such as internal networks, file sharing, extranets, and database connections etc.

**"We aim above the mark to hit the mark."**

**~ Ralph Waldo Emerson**

# Business Information Systems

## Define

- (a) **Business Information System:** Business Information Systems may be defined as system integrating business functions and information modules for establishing effective communication channels which are useful for making timely and accurate decisions and in turn contribute to organizational productivity and competitiveness.
- (b) **Business Process:** A Business Process is a collection of related, structured activities or tasks that produce a specific service or product (serve a particular goal) for a specific organization.
- (c) **Knowledge Management:** Knowledge Management encompasses both the content and the process of creating the content. It refers both to what is known and how it came to be known.
- (d) **eXtensible Business Reporting Language (XBRL):** XBRL is freely available international standards-based business reporting language developed by accountants for financial reporting.
- (e) **Online Analytical Processing (OLAP):** OLAP is a multi-dimensional analytical tool typically used in data mining, that gathers and process vast amounts of information into useful packets.
- (f) **Credit Cards:** In a credit card transaction, the steps involved are authorization, batching, clearing and funding. The consumer presents preliminary proof of his ability to pay by presenting his credit card number to the merchant. The merchant can verify this with the bank, and create a purchase slip for the consumer to endorse. The merchant then uses this purchase slip to collect funds from the bank, and, on the next billing cycle, the consumer receives a statement from the bank with a record of the transaction.
- (g) **Electronic Cheque:** Credit card payments are popular for commerce on the Internet. However, FSTC and CyberCash are two systems that let consumers use electronic cheques to pay Web merchants directly. **Financial Services Technology Corporation (FSTC)** is a consortium of banks and clearing houses that has designed an electronic cheque that is initiated electronically, and uses a digital signature for signing and endorsing. By **CyberCash**, electronic cheque functions as a message to the sender's bank to transfer funds, and, like a paper cheque, the message is given initially to the receiver who, in turn, endorses the cheque and presents it to the bank to obtain funds.
- (h) **Smart Cards:** Smart cards are any pocket sized card with embedded integrated circuits. Smart cards can provide identification authentications, data storage and application processing. Smart cards may serve as a credit or ATM cards, Fuel cards, mobile phone SIMs, access-control cards, public transport or public phone payment cards etc. on the card. Contact cards, Contactless cards and Combi/Hybrid Cards are the three types of Smart Cards.
- (i) **Electronic Purses:** Electronic Purse Card is very similar to a pre-paid card. Bank issues a stored value card to its customer, the customer can then transfer value from his/her account to the card at an ATM, a personal computer, or a specially equipped telephone. While making purchases, customers pass their cards through a vendor's Point of Sale terminal. Validation is done through a Personal Identification Number (PIN Number). Once the transaction is complete, funds are deducted directly from the cards and transferred to the vendor's terminal. When the value on a card is spent, consumers can load additional funds from their accounts to the card.

**"Life is change. Growth is optional. Choose wisely."**

**~ Karen Kaiser Clark**

# Business Process Automation through Application Software

## Descriptive question may be asked

1. *Discuss some of the applications that help enterprise to achieve Business Process Automation.*
2. *How can controls be classified based on the time at which they are applied?*
3. *What do you mean by the term “Virtualization”? Discuss its major applications.*
4. *Discuss the steps involved in implementing Business Process Automation.*
5. *Define the following terms in brief.*
  - (a) *Cloud Computing*
  - (b) *Grid Computing*
  - (c) *Control in BPA*
6. *Discuss the major parameters that need to be considered while choosing an appropriate delivery channel for information.*
7. *Discuss Boundary Controls in details.*
8. *What do you understand by Database Controls? Discuss in brief.*
9. *Differentiate between Input Controls and Output Controls.*
10. *How Process Controls are used to have consistency in the control process?*

**When odds are one in a million, trying be that one.**  
~ Ca students

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