

## Q=1 EXPLAIN IN DETAIL

### a. TRANSACTION PROCESSING SYSTEMS.

It is the processing in which a system respond to a user's command to carry out some operation to and fro. The request or command is called TRANSACTION, and the system carrying it out is called TRANSACTION PROCESSING SYSTEM e.g cash machines. Transaction processing systems are the systems working at a low level of any organizational structure being operated by data entry operators etc to collect and store data which is needed to be transported then to decisional level of organisations. But it is important to make sure nothing goes wrong at this level of handling data before it is transported to upper level to be manipulated and then making decisions based on information provided.

“There is some support for the propositions that

- (1) Transaction processing systems should be able to be managed within each work group in an organisation, managed that is with respect to work stations in use and functionality available on those workstations.
- (2) exhibit very little model behaviour.
- (3) support a high degree of operator independence or asynchronity.”

REFERNCE:

<http://www.csse.monash.edu.au/~cavram/papers/tp/tr94-02h.html>

There are 9 types of transaction processing models

- 1: Batch systems:**
- 2: Monitor systems :**
- 3: Time sharing systems**
- 4: Advanced virtual terminal front end systems**
- 5: Client server systems**
- 6: Electronic mail and forms**
- 7: Database based groupware**
- 8: (IVR) systems**

## **9: (EDI) systems**

“Transaction processing systems are information systems which collect data and distribute operational data both within and between organisations. The wide spread use of networks and personal computers (used as terminals) has provided feasible new options for the design of transaction processing systems”

### **b. DECISION SUPPORT SYSTEMS:**

“Decision Support Systems (DSS) are a class of computerized information systems that support decision-making activities. DSS are interactive computer-based systems and subsystems intended to help decision makers use communications technologies, data, documents, knowledge and/or models to successfully complete decision process tasks”

**Reference:** <http://dssresources.com/>

Decision support systems are the computer information application which collects and analyze data and then present it to the decision making people of organisation i.e managers . decision support system as the name suggest help and support managers to make effective ,right and timely decisions. These systems store and process data at a much higher and efficient speed and then represent the information in multiple forms which could be regular text , graphical representation, numerical etc which really enable managers to come up with timely and right decisions.

As the decision makers could be different so can be the systems as some work individually while other work in teams there are differences in decision contexts, types, and makers.

“There are certain common traits that decision-making processes tend to exhibit. They typically involve the phases of intelligence, design, and choice. They are very much concerned with the recognition and subsequent solution of problems. A decision-making episode is a flow of problem solving episodes. Decision-making processes are based on strategies to guide the flow. Some common strategies include optimizing, satisficing, and incrementalism. Decision support systems can help in any of the phases, in problem recognition and solution efforts, and in the implementation of various strategies. ”

**Reference:****A Knowledge-Based Approach (ISBN 0-324-03578-0)****By Thomson Learning Custom Publishing****C: EXECUTIVE INFORMATION SYSTEMS:**

Organizations are becoming heavily dependent on some sort of information systems and to overcome the load at higher management level, executive information system was derived in order to minimize the pressure and overwhelming load in order to carry out executive level duties and help the executives to control other information systems already working like DSS etc. As executive information system is specifically designed to meet the needs of executive level of organization it comes with all right kind of programs, softwares etc which can really help executives to manage and maintain their daily work and their ever expanding information systems. EIS help top management to analyze, check and closely observe whatever is going internally and externally. For particularly larger organization there is huge amount of informational data in several forms to be monitored periodically coming from all other information systems working in and around organization. As in today's ever expanding business horizon there is competition, media war, watchdogs and regulatory agencies are all concerned about business practices, which put a lot of strain on top management to keep their organization on fit and firm grounds. For this and in order to make timely and accurate decisions coming from the information systems working at low level of organization Executive Information System is needed to access and utilize that information. These information systems require heavy duty expenditures in order to install, run and maintain. Also it is very necessary to have user friendly interface and executives involvement in order to design and implement the EIS. This information system help determine root cause of any problem as it quickly identifies the loop hole and gives drill-down mechanism to find underlying problems.

**Q=3 EXPLAIN THE VARIOUS COMPONENTS OF A COMPUTER?  
EXPLAIN IN DETAIL ANY 5 INPUT AND 5 OUTPUT DEVICES.**

**VARIOUS COMPONENTS OF COMPUTER:**

Computer is not just any other ordinary mechanic device like TV or RADIO etc. It's a much complex machine which should be better called as system, as it comprise of many components, devices , applications ,programs etc etc. There are various components of computer which are as follows:

**1: CPU**

**2: PROCESSORS**

**3: MOTHERBOARD**

**4 : INTERFACES**

**5: CHIPSETS**

**6: SYSTEM MEMORY**

**7: MOBILE COMPUTING**

**8: OPERATING SYSTEMS**

**9: STORAGE DEVICES**

- (a) Hard disks
- (b) CD –ROM
- (c) CD-R/CD RW
- (d) DVD
- (e) Tape technology
- (f) Floppy disk

**10: MULTIMEDIA DEVICES**

- (a) graphic card
- (b) sound card
- (c) digital video
- (d) CRT monitors
- (e) Panel display

**11: INPUT DEVICES**

**(a) Mouse:**

Mouse is the input device for navigation and interacting. It could be a built in feature as is in laptops or can be attached externally. Mouse has three main functions, Left key, right key and Drag. The information or command

made through mouse is treated as input and is sent to the operating system which accept that input as data for word processing program after checking that its actively working. Then the data sent is determined on the basis of its format by that program and is sent to be stored temporarily in RAM i.e random access memory.

“inside the mouse are a switch for each button, and a microcontroller which interpret the signals from the sensors and the switches, using its firmware program to translate them into packets of data which are sent to the PC. Serial mice use voltages of 12V and an [asynchronous](#) protocol from Microsoft comprised of three bytes per packet to report x and y movement plus button presses”

**Reference: <http://www.pctechguide.com>**

#### **(1) Keyboard:**

It is a device for entering information whether its numerical , alphabetical or any other. All commands are typed through this very vital device of computer which has made chatting and to input commands very easy. It is a board having many switches which are connected with the microprocessor which respond to any change for example the pressing of keys etc and it then trigger the command to be executed. Keyboards are of different types which differ from each other by varying factors. As laptop computers have built in keyboards that are directly attached with the monitor for being portable. Whereas in other computer systems , keyboards being peripheral device is attached with the computer externally with the help of attachment cable. But generally speaking the keyboards have a standard layout of different kinds of keys. There are 4 kinds of keys

**1. Alphabetical / typing keys**

**2. Numerical keys**

**3. Function keys**

**4. Control keys**

There are some commonly found keyboards which are

“101-key Enhanced keyboard

104-key Windows keyboard

82-key Apple standard keyboard

108-key Apple Extended keyboard”

The processor in a keyboard has to understand several things that are important to the utility of the keyboard, such as:

1. Position of the key in the key matrix.
2. The amount of bounce and how to filter it.
3. The speed at which to transmit the typematics.

**Reference:** <http://www.howstuffworks.com>

## **(2) Touchscreens:**

Touchscreen is a relatively new input device as compared to traditional keyboard and mouse. It has revolutionised the innovations in computer world and helped making things simpler and yet effective. This dynamic input device work simply by touching the display screen and navigating different functions available on screen. This is now widely used in and around Banking system as well Museums etc. computer systems with touchscreen have smaller footprints and that is why can be easily mounted on walls for easy and frequent access.

Its user friendly interface has made it a very popular in many businesses where customer can self cater themselves.

There are many different kinds of touchscreens available as:

### **1. Infrared touchscreen:**

These touchscreens are based on LIGHT BEAM INTERRUPTION technology.

### **2. SAW touchscreen:**

These touchscreens are based on SURFACE ACOUSTIC WAVE technology.

### **3. Resistive touchscreen:**

These touchscreens are made of glass which is coated with layers which are conductive as well as resistive to electric. These screens respond to press or touch of finger or stylus.

### **4. Capacitive touchscreen:**

These touchscreens have glass panel coated with charge storing material.

**Touchscreens have few basic elements as:**

**A software driver:**

This software turn the “touch” data into a “mouse” data and act as an interface to the operating system of computer.

**Sensor panel :**

“It sits above the display and which generates appropriate voltages according to where, precisely, it is touched”

**Controller.**

“It processes the signals received from the sensor and translates these into touch event data which is passed to the PC’s processor, usually via a serial or USB interface”

reference: <http://www.pctechguide.com>

- (b) **Tablet (stylus)**
- (c) **Microphone**
- (d) **Digital camera:**

Digital cameras are another great example of input device of computer. Because it has enable now to directly transfer photos and videos to computer for storing and editing purposes. These cameras use advance image sensor technology enabling them to transfer it to digital format which can be easily viewed. In digital movie cameras the sounds stored are turned into .wav files and shots as MPEG’s etc which enable computer to quickly co-ordinate with the file formats which can be edited later on. Now photos Can be transformed into desired mode as eliminating RED EYE , light effects, background, monochromatic effect etc in simple easy way. Digital cameras also have features which enable them to send thumbnail images by the email through a special software called camera resident.

Reference:[http:// www.pctechguide.com/19digcam.htm](http://www.pctechguide.com/19digcam.htm)

- (e) **Scanner:**

**Scanner is another input device which enable to transfer images etc from a hard copy into the computer system . They are a popular device with growing market value as it has numerous valuable uses of transferring specialist graphical images and texts into computer. Following are some of scanners:**

- **High end drum scanners:** capable of scanning both reflective art and transparencies, from 35mm slides to 16-foot x 20in material at high (10,000dpi+) resolutions
- **Compact document scanners:** designed exclusively for [OCR](#) and document management
- **Dedicated photo scanners:** which work by moving a photo over a stationary light source
- **Transparency scanners:** which work by passing light *through* an image rather than reflecting light off it
- **Handheld scanners:** for the budget end of the market or for those with little desk space.

**Reference: <http://www.pctechguide.com>**

Scanners by using light convert analogue data into the digital data by putting sensors to capture light transmission. Different technologies are used in scanner to carry out process of scanning like: “PMT” technology in which two light sources are used for transparent and reflective originals which are split into three beams through three colour filters after being catch by sensors . Then in photo multiplier tubes this light would be converted into electric signals .“CCD” technology is called charged coupled device which also transfer light into electric charge by using mirrors and lenses. “CIS” technology also does the same function but instead of using lenses and mirrors , the sensors are used.

## **11: OUTPUT DEVICES**

### **(a) Printers:**

**Printers are a very important output devices in computer systems. There were inkjet printers and then laser ones, but they are probably the only printers we**



**are most familiar with although there are printers which work with other kind of technologies for example**

**(1) Solid ink printers:**

They are the printers which use sticks of solid wax ink .they liquefy wax into reservoir and then use it on transfer drum where it is cold fused and passed on paper to be printed.

**(2) Dot matrix printers:**

“Dot matrix printers produce characters and illustrations by striking pins against an ink ribbon to print closely spaced dots in the appropriate shape”

reference: <http://www.pctechguide.com>

**(3) Thermal wax printers:**

These printers use panels which are coated with plastic and wax based colors.

**(4) Dye sublimation printers:**

These printers use dye instead of ink.

**(5) Thermo autochrome printers:**

It is a relatively latest technology made for printing of digital images at their best. they have special paper for printing with layers of three pigments in cyan ,magenta and yellow colors.This printer has thermal and ultraviolet heads.

1. INKJET PRINTERS
2. LASER PRINTERS

**Reference:** <http://www.pctechguide.com>

**(a) Speaker**

**(b) Projector**

**(c) Monitor**

**(e) CD recoder**

**12: COMMUNICATION**

(a) Networking

(b) Digital communication

(c) Serial communication

**Q=2 WHAT IS A NETWORK ?EXPLAIN IN DETAIL TYPES OF NETWORKS AND NETWORK TOPOLOGIES.**

**NETWORKING:**

Linking of two or more computers or systems for the purpose of sharing data is called networking. The two major kind of networks are LAN i.e local area network and

WAN i.e wide area network.

**. LAN**

LAN deals with the systems working in a close proximity and hence doesn't require complex networking. Local area networks provide high speed and efficiency and has fault tolerance. Usually LAN is set up in small area for example a building where fewer systems are networked together for people working in the building to easily transmit information and communicate with each other and share data.

**. WAN**

WAN on the other hand deals with much larger networks and can accommodate larger working area for example cities ,countries etc. Wide area network depend upon some larger transmitters eg phone lines to connect smaller networks like LAN's into WAN like internet.

**DIFFERENT TYPES OF NETWORKS:**

**1.TOKEN RING NETWORK:**

A network with a ring topology that passes tokens from one attaching device to another; for example, the IBM Token-ring network.

**Token-ring adapter type 1:**

A token-ring interface coupler (TIC) that operates at 4-Mbps (megabits per second) token-ring speed.

**Token-ring adapter type 2:**

A token-ring interface coupler (TIC) supported only on an IBM 3745 Communication Controller. The adapter can be configured to support 4-Mbps (megabits per second) or 16-Mbps token-ring speed and to support subarea and peripheral nodes on the same adapter. When configured for 16-Mbps, the token-ring adapter type 2 provides the capability for early token release.

**Token-ring interface coupler (TIC):**

An adapter that can connect a 3720, 3725, or 3745 Communication Controller to an IBM Token-Ring Network.

**Token-ring network:**

(1) A ring network that allows unidirectional data transmission between data stations, by a token passing procedure, such that the transmitted data return to the transmitting station. (T) (2) A network that uses a ring topology, in which tokens are passed in a circuit from node to node. A node that is ready to send can capture the token and insert data for transmission.

**2. ETHERNET**

**a. Fast Ethernet.**

**b. Gigabit Ethernet.**

**(a) Ethernet**

(1) A 10/100-megabit baseband local area network that allows multiple stations to access the transmission medium at will without prior coordination, avoids contention by using carrier sense and deference, and resolves contention by using collision detection and transmission.

Ethernet uses carrier sense multiple access with collision detection (CSMA/CD). In the AS/400 system, a type of local area network that is supported by the Operating System/400 licensed program. OS/400 Ethernet provides support for Digital Equipment Corporation and Intel Corporation standards, for the Xerox standard (Ethernet Version 3), and for the IEEE 802.3 standards.

## **(b) Gigabit Ethernet**

### **3. PEER- TO- PEER:**

Peer to Peer network is a method of networking which in turn only consists of maximum two computers. Simply to establish a peer to peer network the components that are used are of same nature as in a ethernet network this network is only affective where the required number of computers is not greater than two.

### **4. CLIENT SERVER:**

In TCP/IP, the model of interaction in distributed data processing in which a program at one site sends a request to a program at another site and awaits a response. The requesting program is called a client; the answering program is called a server.

### **5. P2P COMPUTING:**

Pertaining to data transmission between two locations without the use of any intermediate display station or computer.

### **NETWORK TOPOLOGIES:**

Geometric or logical arrangement of number of systems is called as network topology. It is a way of connecting different computer systems by combining design and devices in some fixed patterns in order to achieve desired benefit.

### **TYPES OF NETWORK TOPOLOGIES:**

There are different kinds of network topologies

#### **a. Bus topology:**

In bus topology different systems or nodes are interconnected With a central cable called as bus. Many nodes communicate With each other via bus. If any breakdown occur in the central

Cable the whole topology will be affected until the repair is Done.

**b. Ring topology:**

A ring topology is one in which nodes or systems are connected Such a way that each node is connected directly with two more Nodes one on each side.

**c. Star topology:**

In star topology all systems are interconnected via central Switch called as hub which re transmit the information Here each system is separately connected with the one Central hub through a cable. If one system breakdown it Doesn't affect rest of systems.

**d. Tree topology:**

Tree topology is quite similar with bus topology except that it Can have multiple node.

**e. Mesh topology:**

A network topology in which there are atleast two nodes and Two or more paths between them.

**f. Hybrid topology:**

The combination of two or more network topologies is known As hybrid topology. Two different topologies have to be Connected together in order to get a hybrid topology.

## **ADVANTAGES AND DISADVANTAGES OF NETWORK:**

There are many advantages and disadvantages of networking.

### **Advantages:**

1. Networking allow multiple users to access the information at the same time.
2. Many things like scanners and printers that are expensive can be shared.
3. In larger networks users can interact with each other via e-mail

**Disadvantages:**

1. In networking the breakdown of server affect workstations connected to it also if in smaller networks a problem in central hub etc can also affect others.
2. File servers, interface cards etc are expensive to install.
3. Virus hoaxes can potentially damage the server alongwith other systems attached to it.
4. Hacking is a big security threat as if it enters in server it easily is transmitted to the whole network of any organization.

**Database:**

A collection of data with a given structure for accepting, storing, and providing, on demand, data for multiple users.

- (1) A collection of interrelated data organized according to a database schema to serve one or more applications.
- (2) A collection of data fundamental to a system.
- (3) A collection of data fundamental to an enterprise.

**Management information system (MIS):**

An information system designed to aid in the performance of management functions.

An information processing system that supports decision-making by the management of an organization.

If we see closely the structure of any organization we can see that today even medium sized corporations have several departments that rely upon the information from each other . And there is lot of information in the form of data is needed by other departments and management in order to monitor the progress of company and to be able to forecast and make decisions based on that information. Information systems were evolved in late 60's and early 70's when the need of faster functions become vital in order to do more work in less time with excellent efficiency. Initially information systems were needed only to cater the needs of organizations involving accounts in terms of financial transactions, payrolls, financial statements etc. As time went by the importance of information systems department in any business or organization on wider scale started to dawn to managers. With newer technological developments it became easier to implant smaller, faster equipment in order to run

information systems more effectively as well as to expand the information systems beyond accounting department to the departments related to marketing , production, human resource etc. Computer based information systems helped organizations more of it being user friendly. As computers kept evolving all the time into newer and better generations like portable computers, them being able to be networked together within and outside the organization , and integrated databases for employees.

Information systems are of many types and we need to see that since organizations have become dependent upon them , Are they really helping organizations? and Are they being BANE or BOON?. But before I can say that information systems are BANE or BOON I think one must understand how information system works in the organization and how they have become dependent on it. There are five major functions of information systems according to Markus (1984) and these are :

**1: Operational:**

Information systems has the operational function which help generate timely, reliable information regarding order entry, invoices, sales etc.

**2: Monitoring :**

As name suggests it monitor the performance of organization in terms of profit making, gaining goals, wokers, machinery and the system itself.

**3: Decision support:**

It is most important factor as it provides the information to management on the basis of which they make critical decisions. That's why information systems have to be highly efficient and sensitive.

**4: Knowledge :**

People who program the information systems get to know the requirements of managers who rely upon it and then they use that knowledge to customize information system for that particular organization and its different functions.

**5: Communication:**

information systems can also be recognized as communication systems as information is passed on and shared . The systems help by eliminating time and location difference by corresponding through faster ways like e-mail, chatting, video conferencing etc.

By looking at all above five functions by MARKUS (1984) it becomes apparent that how organization work and how it has several functions which involve throughout between supply of raw materials, information to end product or service. And all these are based on information available and provided. So it is difficult to see that Information systems are boon. The only way they could be boon when they are misused or taken advantage of by providing wrong information etc or system failure without alternates. But if these factors are eliminated which could occur in any other technological systems upon which we rely a lot nowadays they are nothing but purely bane.

There are many types of information systems and still many can be adopted and customized with individual needs.

**Transaction processing systems (TPS):**

**Decision support systems (DSS):**

**Executive information systems (EIS):**

**Management reporting systems (MRS):**

**Office information systems (OIS):**

**Customer relationship management systems (CRM):**

**Human based Information systems:**

It is based on purely natural instincts of humans, their need of interaction and the communication that occurs among them in form of verbal, written, gestures, body language, observation, thinking and manipulating information in mind, forecasting and analysing using natural instincts and observation, and curiosity etc. Information which is collected by using all these or any of these methods is used in making decisions by managers.

In the case of Human information systems it could be reliable for instance if managers observe thoroughly and interact with workers at low level face to face then manager will be able to judge about their problem by talking, and can see the level of their satisfaction in terms of their labour rights, plight of working conditions etc which could have never been reached to managers any other way.

**Paper based Information systems:**

This is the type of information system which has always been there in organizations. It is though the old method which is fine but information it holds cannot be easily accessed. Many organizations are still working and working alright by only using the



paper based information system as long as they are not dependent upon faster correspondence or other factors this system works for them. Because in many poor countries small or medium small businesses cannot afford to implement and install large computer based networks. And it is also vital I guess as its very important for any organization to have their data on hard copy as well in case of system breakdown, electricity failure.

### **Computer based Information systems:**

The information systems comprising computers is humans biggest achievement in technological world. As it provide reliable, uniform and timely information without getting to worry as it can do work of many humans in almost no time. Different supports are used like scanners, printers, speakers etc in order to produce work with many features it also help to easily manipulate, record and communicate the information. They are used at most levels in any business like retailing, manufacturing, accounting, distribution, human resource etc. Computer based information systems are used individually ,in departments, inter organizational systems.

In my opinion computer based information systems are a definite bane as it has done a revolutionary job by doing complex work in very short time provided with less or no flaws. Though it has eliminated jobs in various sectors as it took hold of many operations which can be done now without having to appoint many people which is not so good in terms of cutting down employment but it is good for organizations. As they have to meet orders and time is money for them, it also helps eliminating additional costs like travelling etc. Then it comes with very promising solutions using internet as e-mail , chatting and video conferencing has eliminated all barriers and boundaries by making world a global village. Now companies can put their profiles on web and can surf net to find new propostions, learn new trends and find new horizons.

### **Advantages and disadvantages of information systems in management:**

#### **1. Suppliers:**

The advantage is that suppliers sometime use web resources to give their products or services direct to buyer and cut down middle man which save them money.

On the other hand it affects the business where supply of raw materials is bought from independent suppliers. In the case of above situation supplier will no longer supply them at low price which can harm them as their final products were made of supply which will now not come.

## **2. Competition:**

The advantage is for those who get away by setting up attractive web site with easy to access features and which doesn't breakdown i.e is well maintained with competitive prices. And it is a disadvantage for organizations who were doing good when they were operating in area where it was there monopoly and their goods were bought at whatever price they would put on.

## **3. Bargaining power of buyers:**

It is bane for buyers or I should say poor buyers who were forced to buy their needs to whatever price and choice was available. But now in this era information systems have solved this problem by setting up enterprises and online shopping which now in order to stay in business with extreme competition around , they sell wider range of products with innovations, bargain prices and different options and facilities like free delivery etc. which has increased the bargaining power of consumers or buyers.

So if we see all above factors which are still only few of many around of information systems, we need to see how they could be boon. Well in my opinion there could be reasons which could lead to any uncertainty which could be at root level i.e knowledge level. Because if not necessary measurements were done at time of designing information system for any particular organization then they can end up in disaster. Like if the information system set up was not customer focused in terms of understanding their needs and demands, if it was not regularly monitored and upgraded as time went by and newer changes were made in organization, if political influence was considered instead of real and fair way to where and when to implement it, if cost to run and maintain was underestimated etc etc.

So, if the information systems are designed properly and then used properly there is no point of thinking them as boon. They are pure bless of being bane.

