

Model answer

Course: MBA

Semester: III

Subject: DSS and MIS

1. Short Answer questions

- (i) Components of system” Input, Processing, Output, Boundary, Environment, Control/Feedback.
- (ii) Business processes refer to the set of logically related tasks and behaviours that organizations develop over time to produce specific business results and the unique manner in which these activities are organized and coordinated.
- (iii) A programming language is a formal language designed to communicate instructions to a machine, particularly a computer. Programming languages can be used to create programs that control the behaviour of a machine and/or to express algorithms precisely.
- (iv) Top level Unstructured; Middle Level Semi structured and Operational level Structured.
- (v) A systems analyst researches problem, plans solutions, recommends software and systems, at least at the functional level, and coordinates development to meet business or other requirements. Although they may be familiar with a variety of programming languages, operating systems, and computer hardware platforms, they do not normally involve themselves in the actual hardware or software development. Because they often write user requests into technical specifications, the systems analysts are the liaisons between vendors and information technology professionals.
- (vi) Electronic commerce, commonly known as e-commerce or e-Commerce, is a type of industry where the buying and selling of products or services is conducted over electronic systems such as the Internet and other computer networks.
- (vii) Entity is a person, place, thing, or event about which information must be kept especially in context of BDMS and are particularly useful for ERD. Attribute is a piece of information describing a particular entity or its characteristics.
- (viii) Data dictionary is an automated or manual tool for storing and organizing information about the data maintained in a database.
- (ix) To control and regulate a system and to locate exception as per acceptable tolerance limit.
- (x) Data mining is analysis of large pools of data to find patterns and rules that can be used to guide decision making and predict future behaviour through extracting patters by Clustering, Sequencing, Classifying and forecasting

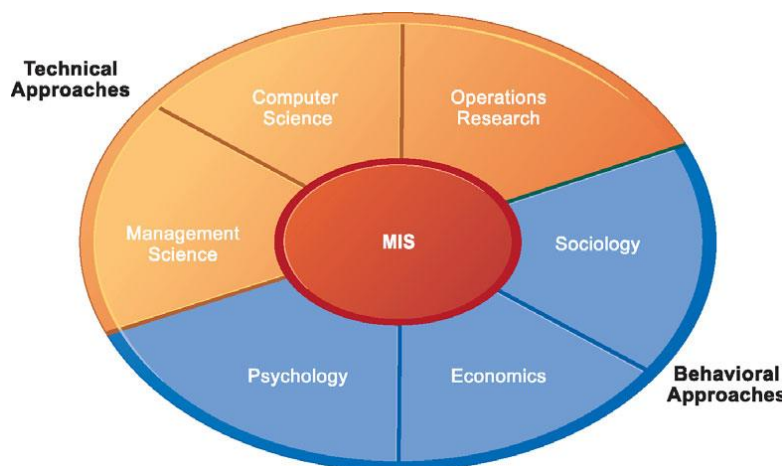
Long Answer Questions:

2. An information system can be defined technically as a set of interrelated components that collect (or retrieve), process, store, and distribute information to support decision making and control in an organization. In addition to supporting decision making, coordination, and control, information systems may also help managers and workers analyse problems, visualize complex subjects, and create new products. Information systems contain information about significant people, places, and things within the organization or in the environment surrounding it. By information we mean data that have been shaped into a form that is meaningful and useful to human beings. Data, in contrast, are streams of raw facts representing events occurring in organizations or the physical environment before they have been organized and arranged into a form that people can understand and use. Organizations, make decisions, and formulate action plans to solve organizational problems. Managers perceive business challenges in the environment; they set the organizational strategy for responding to those challenges; and they allocate the human and financial resources to coordinate the work and achieve success. Throughout, they must exercise responsible leadership.

Information technology is one of many tools managers use to cope with change. Computer hardware is the physical equipment used for input, processing, and output activities in an information system. It consists of the following: computers of various sizes and shapes (including mobile handheld devices); various input, output, and storage devices; and telecommunications devices that link computers together. Computer software consists of the detailed, preprogramed instructions that control and coordinate the computer hardware components in an information system. Data management technology consists of the software governing the organization of data on physical storage media.

The scope of MIS must be discussed in context of application areas of MIS including managerial functions as well as business process.

3. Approaches to study MIS are:



Further Enterprise analysis method as well as Critical Success factor method must be discussed. Additionally Hybrid approach of studying MIS must also be explained.

4. A business firm has systems to support different groups or levels of management. They could typically be grouped as Operations support System circumventing Process control system, office Automation System etc. Further another important class of information system supports managerial functions. These systems include transaction processing systems, management information systems, decision-support systems, and systems for business intelligence. Examinee must explain these information system types with suitable examples.
5. Implementation of information system is a challenging task and return of investment in system development largely depends on implementation of candidate system. Methods of information system are Parallel, Direct Cut off, Pilot and Phased. These phases must be explained as:

In a parallel strategy, both the old system and its potential replacement are run together for a time until everyone is assured that the new one functions correctly. This is the safest conversion approach because, in the event of errors or processing disruptions, the old system can still be used as a backup. However, this approach is very expensive, and additional staff or resources may be required to run the extra system.

The direct cutover strategy replaces the old system entirely with the new system on an appointed day. It is a very risky approach that can potentially be more costly than running two systems in parallel if serious problems with the new system are found. There is no other system to fall back on. Dislocations, disruptions, and the cost of corrections may be enormous.

The pilot study strategy introduces the new system to only a limited area of the organization, such as a single department or operating unit. When this pilot version is complete and working smoothly, it is installed throughout the rest of the organization, either simultaneously or in stages.

The phased approach strategy introduces the new system in stages, either by functions or by organizational units.

The challenges of implementation must be discussed in context of Operational, financial, functional and psychological issues that has to be dealt while implementing an information system.
6. A Transaction processing system (TPS) is a computerized system that performs and records the daily routine transactions necessary to conduct business, such as sales order entry, hotel reservations, payroll, employee record keeping, and shipping. The principal purpose of systems at this level is to answer routine questions and to track the flow of transactions through the organization. How many parts are in inventory? What happened to one's payment? To answer these kinds of questions, information generally must be easily available, current, and accurate. At the operational level, tasks, resources, and goals are predefined and highly structured. The decision to grant credit to a customer, for instance, is made by a lower-level supervisor according to predefined criteria. All that must be determined is whether the customer meets the criteria. Illustrates a TPS through block diagram.

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The data in the system are combined in different ways to create reports of interest to management and government agencies. Managers need TPS to monitor the status of internal operations and the firm's relations with the external environment. TPS are also major producers of information for the other systems and business functions.

Middle management needs systems to help with monitoring, controlling, decision-making, and administrative activities. The principal question addressed by such systems is this: Are things working well? Management information systems must be defined by examinee as the study of information systems in business and management. The term management information systems (MIS) also designates a specific category of information systems serving middle management. MIS provide middle managers with reports on the organization's current performance. This information is used to monitor and control the business and predict future performance. MIS summarize and report on the company's basic operations using data supplied by transaction processing systems. The basic transaction data from TPS are compressed and usually presented in reports that are produced on a regular schedule. Today, many of these reports are delivered online. A comparative chart may be used for comparing the functions of TPS and MIS.

7. Systems design and analysis is the analysis of a problem that a firm tries to solve with an information system. It consists of defining the problem, identifying its causes, specifying the solution, and identifying the information requirements that must be met by a system solution. The systems analyst creates a road map of the existing organization and systems, identifying the primary owners and users of data along with existing hardware and software. The systems analyst then details the problems of existing systems. By examining documents, work papers, and procedures; observing system operations; and interviewing key users of the systems, the analyst can identify the problem areas and objectives a solution would achieve. Often the solution requires building a new information system or improving an existing one. The systems analysis also includes a feasibility study to determine whether that solution is feasible, or achievable, from a financial, technical, and organizational standpoint. The feasibility study determines whether the proposed system is expected to be a good investment, whether the technology needed for the system is available and can be handled by the firm's information systems specialists, and whether the organization can handle the changes introduced by the system. Normally, the systems analysis process identifies several alternative solutions that the organization can pursue and assess the feasibility of each. A written systems proposal report describes the costs and benefits, and the advantages and disadvantages, of each alternative. It is up to management to determine which mix of costs, benefits, technical features, and organizational impacts represents the most desirable alternative. Following steps in detail must be described by examinee while explaining the process of system development.
 - a. System Analysis
 - b. System Design
 - c. Programming
 - d. Testing
 - e. Conversion and Implementation
 - f. Commissioning and Maintenance.

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8. A database management system (DBMS) is software that permits an organization to centralize data, manage them efficiently, and provide access to the stored data by application programs. The DBMS acts as an interface between application programs and the physical data files. When the application program calls for a data item, such as gross pay, the DBMS finds this item in the database and presents it to the application program. Using traditional data files, the programmer would have to specify the size and format of each data element used in the program and then tell the computer where they were located.

The DBMS relieves the programmer or end user from the task of understanding where and how the data are actually stored by separating the logical and physical views of the data. The *logical view* presents data as they would be perceived by end users or business specialists; whereas the *physical view* shows how data are actually organized and structured on physical storage media. The database management software makes the physical database available for different logical views required by users. All these views must be stored in a single database, where they can be more easily managed by the organization.

Contemporary DBMS use different database models to keep track of entities, attributes, and relationships. The most popular type of DBMS today for PCs as well as for larger computers and mainframes is the relational DBMS (RDBMS).

Relational databases represent data as two-dimensional tables (called relations). Tables may be referred to as files. Each table contains data on an entity and its attributes. Examples are Microsoft Access is a relational DBMS for desktop systems, whereas DB2, Oracle Database, and Microsoft SQL Server are relational DBMS for large mainframes and midrange computers. MySQL is a popular open-source DBMS, and Oracle Database Lite is a DBMS for small handheld computing devices.

An object-oriented DBMS stores the data and procedures that act on those data as objects that can be automatically retrieved and shared. Object-oriented database management systems (OODBMS) are becoming popular because they can be used to manage the various multimedia components or Java applets used in Web applications, which typically integrate pieces of information from a variety of sources.

9. Building a new information system is one kind of planned organizational change. The introduction of a new information system involves much more than new hardware and software. It also includes changes in jobs, skills, management, and organization. When we design a new information system, we are redesigning the organization. System builders must understand how a system will affect specific business processes and the organization as a whole.

Information technology can promote various degrees of organizational change, ranging from incremental to far-reaching. Four kinds of structural organizational change that are enabled by information technology:

- (1) Automation,
- (2) Rationalization,
- (3) Business process redesign,
- (4) Paradigm shifts (BPR)

Each carries different risks and rewards which may be illustrated through a matrix by examinee.