Course: Information system and data processing
Program: BS (SE)
Instructor: Muhammad Abrar Khan
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Note: Attempt all questions. Use examples and diagrams where necessary.

Student Name: Shayan khan   **Student ID#:   6833**

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Q.1   What are systems? Explain in detail. Take a daily life example of system (any organization or company) and explain its component one by one in detail.

Answer:

System:

System is a combination of components or that are organized for a common purpose. The word sometimes describes the organization or plans itself and is similar in meaning to method as in "I have my own little system" and sometimes describes the parts in the system as in "computer system".

A computer system consists of hardware components that have been carefully chosen so that they work well together and software components or programs that run in the computer.

The main software component is itself an operating system that manages and provides services to other programs that can be run in the computer.

A filing system is a group of files organized with a plan for instance alphabetical by customer.

All of nature and the universe can be said to be a system. We've coined a word, ecosystem, for the systems on Earth that affect life systems.

The term can be very useful because so many things can be described as systems. It can also be very unuseful when a more specific term is needed.

Example: There are many examples of real-time system in our life, first we must know what is the real-time. Real-time is a more flexible word. If there is a network work with a speed 1 Kbyte/sec and the designed system can give an output by speed greater than 1 Kbyte/sec, it will be a real-time system with respect to that network, so it depend on the speed of the network and there aren't a limited speed of execution to be a standard for real time that can according to it can be decided that the system is a real-time or not.

So, the MP3 player is a real-time system, satellite receiver and routers also.

Components of a System:

Following are the important components of the system.

• Elements Input

Input, Raw Data in computer system

• Computation Process,

Application and analysis of any model

• Elements Output

Computation Results

• Mechanism Control

Actual and Expected Comparison

• Feedback system

Corrective action

• Objectives

Expected/Ideal output   7

Q.2: **What is Management information system? Take an example of MIS of any organization and elaborate in your own words.**

Answer:

A management information system (MIS) is a computerized database of financial information organized and programmed in such a way that it produces regular reports on operations for every level of management in a company. It is usually also possible to obtain special reports from the system easily. The main purpose of the MIS is to give managers feedback about their own performance; top management can monitor the company as a whole. Information displayed by the MIS typically shows "actual" data over against "planned" results and results from a year before; thus it measures progress against goals. The MIS receives data from company units and functions. Some of the data are collected automatically from computer-linked check-out counters; others are keyed in at periodic intervals. Routine reports are preprogrammed and run at intervals or on demand while others are obtained using built-in query languages; display functions built into the system are used by managers to check on status at desk-side computers connected to the MIS by networks. Many sophisticated systems also monitor and display the performance of the company's stock.

Examples:

MIS software include Microsoft Dynamics, Fleetmatics WORK, Clarity Professional MIS, and Tharstern Limited. MIS programs designed specifically for the graphics and print industry include Avanti Slingshot, EFI Pace, and DDS Accura. Most MIS software programs are available as desktop applications, though many solutions now include web-based interfaces and mobile apps as well.

Q.3 **Explain Marketing Information system and its types in detail.**
Note: You should make your answer understandable by taking a proper example.

Answer:

A marketing information system (MKIS) is a management information system (MIS) designed to support marketing decision making. Jobber (2007) defines it as a "system in which marketing data is formally gathered, stored, analysed and distributed to managers in accordance with their informational needs on a regular basis.

Types of Marketing Information System

Mainly 3 types of marketing information related systems are available that marketing decision-makers use to have valuable insights for wise marketing decisions i.e. Internal Data-Based MIS, Marketing Research, and Competitive Intelligence.

Competitive Intelligence

Another type of marketing information system is competitive intelligence that is used to closely monitor competitors, their marketing strategies, and competitive market statistics. Competitive intelligence is considered as a systematic process related to collecting, observing, and analyzing required information of the business environment that is external to an organization. It further includes the distribution of result data within the organization to make effective decisions. The main objective of competitive intelligence is to analyze the external environment to take appropriate decisions in a competitive market. Different types of competitive intelligence are

- **Information related to the product:** This includes the information regarding the various products of competitors that compete with an organizations products in terms of packaging, quality, quantity delivery of products, features, etc.
- **Market share related information:** This includes information related to the competitors that are selling most products in an organization's target market, changes in market share, organizations that are market leaders, etc.
- **Pricing policy and strategy information:** This includes pricing policy, pricing structure, and strategies of competitors for similar products, discounted price strategy of competitors, comparison that affect an organization's pricing as per competitor's strategy, etc.

Example

Different airlines like **Jet Airways, Spice Jet, Indigo,** etc. use competitive intelligence to remain in a competitive market. These companies keep on changing prices of flight tickets as per the external information of prices of other airline competitors. Once any competitor increases airfare for a specific route or destination then other flight companies may get benefit by flowing suit to gain higher margins.

Internal data-based marketing information system:

Internal data includes information related to current customers and prospective customers of an organization that is part of its internal operating system.

Example:

The marketing department of an organization keeps track of the interest of prospective customers as well as the leads generated from them. The information can be acquired for target market segmentation like gender, age, buying habits, geographic area, etc. Other information i.e. visitors of website, web traffic or customer involvement activities, etc. are also considered as useful internal data. Moreover, salespeople collect and record the information related to customers who are purchasing products or

services, their location, buying behavior, the success stories of customers, the progression of prospective customers towards new customers, etc.

Marketing Research:
  A systematic process of identifying different marketing opportunities is known as marketing research. Also, it includes solving marketing problems by customer data that are captured through the analysis of marketing information. Marketing information is useful for both purposes i.e. identifying reasons for any problem and to collect the necessary information required for research-related queries. It consists of different techniques for collecting and analyzing information. Both primary and secondary research methods can be utilized for marketing research. For more accurate results and solutions, market research may use internal data and competitive intelligence. Different topics for which market research is being conducted are
  Environment-related factors like economic, technical, legal, cultural, etc.
Customer-related data like attitude, buying behavior and pattern, etc.
Research related to product i.e. product size, market, product features, pricing strategies, branding, product positioning, etc. Research related to advertising and promoting products.

Q.4: **Why Decision Making is an important factor to run an organization. Explain your answer with the help of a proper example.**

Answer:
  Decision making refers to making choices among alternative courses of action—which may also include inaction. While it can be argued that management is decision making, half of the decisions made by managers within organizations ultimately fail. Therefore, increasing effectiveness in decision making is an important part of maximizing your effectiveness at work. This will help you understand how to make decisions alone or in a group while avoiding common decision-making pitfalls

Example:
  In 2005 McDonald's Corporation became aware of the need to respond to growing customer concerns regarding the unhealthy aspects (high in fat and calories) of the food they sell. This is a non programmed decision, because for several decades, customers of fast-food restaurants were more concerned with the taste and price of the food, rather than its healthiness. In response to this problem, McDonald's decided to offer healthier alternatives such as the choice to substitute French fries in Happy Meals with apple slices and in 2007 they banned the use of trans fat at their restaurants.

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