

Course: Information system and data processing

Program: BS (SE)

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Examination: Final paper

Total Marks: 50

Date: June. 27, 2020

Note: Attempt all questions. Use examples and diagrams where necessary.

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CLASS : BS SE B

SUBJECT : INFORMATION SYSTEM AND DATA PROCESSING

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.

Ans1:SYSTEM:

A system is a group of elements that are integrated with the common purpose of achieving an objective. Organization having common goal for the achievement are functionally interactive units. All systems have inputs, outputs, and feedback, and maintain a basic level of equilibrium. For example, in the human body the heart functions to support the circulatory system, which is vital to the survival of the entire body.

Example

Purchase System

A simple example can be given of a purchase and sales system. In a typical purchase system information related to purchase of materials is kept, for instance,

- Orders for the purchase of various materials.
- Status of deliveries received against specific orders.
- Changes in the order quantity, time, day or other information.
- Quality inspection reports and whether they need to be communicated to the supplier.
- Updated status report of stock.
- Issues made out of the stock.

Daily life example:

The modern world has numerous kinds of **systems** that influence daily life. **Some examples** include public transport **systems**; solar **systems**; telephone **systems**; the Dewey Decimal **System**; weapons **systems**; ecological **systems**; space **systems**;

Discuss any daily life Examples__public transport system:

include [city buses](#), [trolleybuses](#), [trams](#) (or [light rail](#)) and [passenger trains](#), [rapid transit](#) (metro/subway/underground, etc.) and [ferries](#). Public transport between cities is dominated by [airlines](#), [coaches](#), and [intercity rail](#). [High-speed rail](#) networks are being developed in many parts of the world.

Most public transport systems run along fixed routes with set embarkation/disembarkation points to a prearranged timetable, with the most frequent services running to a [headway](#) (e.g.: "every 15 minutes" as opposed to being scheduled for any specific time of the day). However, most public transport trips include other modes of travel, such as passengers walking or catching bus services to access train stations. [Share taxis](#) offer on-demand services in many parts of the world, which may compete with fixed public transport lines, or complement them, by bringing passengers to interchanges. [Paratransit](#) is sometimes used in areas of low demand and for people who need a door-to-door service.

Components of a system

Every system comprises of basic components which in a coordination formulate a system. These are as follows.

- **Input elements**

The information entered into a system. For instance raw data input to the computer system.

- **Process**

Any specific treatment defined in the system to be performed on the data entered into the system, for instance, computation, analysis, application of any model.

- **Output elements**

The results given by the system after the process has been performed on the data being input to the system.

- **Control mechanism**

Every system is expected to generate some sort of standardized output. Hence actual output needs to be compared with what it is supposed to generate. This comparison of actual with expected output is done with the help of control mechanism.

- **Feedback system**

Once the control mechanism has been devised, it needs to a reporting mechanism, which should respond with a corrective action, if required.

- **Objectives**

We just mentioned that a control mechanism should compare actual output with expected/ideal output. But before this is being done, there needs to be a list of specific objectives which define expected output.

Q.2

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

Ans2:Management information system:

MIRS makes information available to relevant users by producing pre-determined and pre-designed reports required by the management. Management information system helps middle level management planning, controlling and decision making. The data stored can be used or manipulated to produce differently defined reports from pre-defined reports. It can be presented graphically or pictorially. The reports generated by the MIS are used for analytical decision making by the management. The application software can construct projections, build scenarios, do what if analysis to enable better decision making.

For Example

MIS will use the TPS data to generate monthly and weekly summaries as per requirement (product, customer and salesperson. Major purpose is report generation. We would discuss major types of reports.

- Periodic reports – daily, weekly, monthly, annually, format is predefined and structured for convenience.
- Special – Management by Exception reports only when a special event occurs which needs to be

monitored. For instance

- Report sequence to highlight- fast moving & slow moving
- Group the exceptions together – Aged accounts receivable
- Show variance from the norm – Sales analysis report

Example of management information system

Bank information system

Railway information system

Education information system

For **example BANK**, payment and loan functions at commercial **banks** allow us to deposit funds and use our checking accounts and debit cards to pay our bills or make purchases. They can also help us finance our cars and homes. ... Investment **banks** or **systems** conduct trades or deal with capital markets.

Examples of 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.

Ans3:Marketing information system:

The **Marketing Information System** refers to the systematic collection, analysis, interpretation, storage and dissemination of the market information, from both the internal and external sources, to the marketers on a regular, continuous basis.

The marketing information system distributes the relevant information to the marketers who can make the efficient decisions related to the marketing operations viz. Pricing, packaging, new product development, distribution, media, promotion, etc.

Every marketing operation works in unison with the conditions prevailing both inside and outside the organization, and, therefore, there are several sources (viz. Internal, Marketing Intelligence, Marketing Research) through which the relevant information about the market can be obtained

Internal Records: The Company can collect information through its internal records comprising of sales data, customer database, product database, financial data, operations data, etc.

TYPES:

1:Marketing Intelligence System: The marketing intelligence system provides the data about the happenings in the market, i.e. data related to the marketing environment which is external to the organization. It includes the information about the changing market trends, competitor's pricing strategy, change in the customer's tastes and preferences, new products launched in the market, promotion strategy of the competitor, etc.

2:Marketing Research: The Marketing Research is the systematic collection, organization, analysis and interpretation of the primary or the secondary data to find out the solutions to the marketing problems. Several Companies conduct marketing research to analyze the marketing environment comprising of changes in the customer's tastes and preferences, competitor's strategies, the scope of new product launch, etc. by applying several statistical tools. In order to conduct the market research, the data is to be collected that can be either primary data (the first-hand data) or the secondary data (second-hand data, available in books, magazines, research reports, journals, etc.)

3:Marketing Decision Support System: It includes several software programs that can be used by the marketers to analyze the data, collected so far, to take better marketing decisions. With the use of computers, the marketing managers can save the huge data in a tabular form and can apply statistical programs to analyze the data and make the decisions in line with the findings.

4: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.

For example,

1: 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.

2: 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.

Q.4

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

Ans4:Decision making important factor to run an organization:

Where problem is recurring and repetitive, the common factors can be identified in order to identify a particular course of action. Due to which defined set of procedure can be devised for their solution.

Hence,

- o Procedures for obtaining the best solution are standardized
- o Objectives are clearly defined
- o Clearly specified inputs and outputs

Un-structured decisions

When problems are non routine, critical and novel in nature, they require individual judgment, evaluation and insight varying on case-to-case basis. There is no well understood or agreed upon procedure for handling these problems. For such situations, predefined policy cannot be devised. However, once the problem has been figured out, a policy may be devised to handle the problem in future. This can make the problem look like as structured one giving regard to the role of individual judgment.

Semi-structured Decisions

The term is used to refer to the grey area of decisions which lie between the two extremes. Some (but not all) structured phases and often solved using standardized solution procedures and human judgment. In small organizations decisions are usually transferred from form top to bottom. In large organizations the decision are usually taken based on meeting of all departmental heads. The fact is that whether decisions are taken by single person or all in a formal meeting is not the sole determinant of a decision being structured or unstructured. Rather it simply shows the complexity of the problem.

EXAMPLE DECISION MAKING IN MANAGEMENT skills:

You must incorporate a wide variety of skills to make the right decisions. Check out these decision-making skills below that you can add onto your resume to stand out to your future employer:

- Problem-solving
- Leadership
- Reasoning
- Intuition
- Teamwork
- Emotional Intelligence
- Creativity
- Time management
- Organization

1;Problem-solving

Leaders can employ their problem-solving skills to make critical decisions for their company. You need to factor in different viewpoints to consider the numerous variables required to make a thoughtful decision. It's a necessity that you separate the emotions from the conversations you have with people that'll influence your decision-making. The essence of having adept problem-solving skills is that you can formulate decisions quickly and effectively, so you need to do your research and pay close attention to detail to match the facts with the situation you're addressing.

2;Leadership

Leadership is defined as the act of organizing several employees within your organization, and good leadership can establish a consensus about a particular decision. In this case, leadership involves working with people to evaluate the present and motivate them to achieve their goals once a decision is made.

Make sure that you take the time to build a strong relationship with your coworkers, so you can get to know them and have them be comfortable to speak freely around you. The more engaged and personable you are, the higher the likelihood there is to work cohesively with your team and making productive choices that have a long-term impact.

3;Reasoning

Reasoning is one of the main skills needed to be informed about the decision you can make. Make sure that you review all the advantages and disadvantages of the decisions that you're considering taking action on. This is the best way to reason with the present and plan for the future while staying objective and grounded during this process.

Consider all available and relevant points of data to help you guide your decision-making and take a stance about who you're making it with. You want to keep your reasoning aligned with the people you trust and aim to stay committed to the goals you're trying to achieve.

4;Intuition

Intuition is about deciding and trusting your instincts. Your instincts come from the experiences you've witnessed in the past and the core values that drive you each day. The sum of the experiences and the lessons you've learned from them factor into your decision-making. You need to associate your instincts with the potential actions you can take to see if your decision is logical and actionable.

5;Teamwork

You must collaborate with your coworkers at some point to make a sound decision. For example, you may have to work with your marketing manager on the best way to work with the client and improve the results of their marketing campaign last quarter.

Here, you use reasoning to break down options to help the client improve their campaign, so a status report can give you applicable data. After, you can weigh the possible key performance indicators (KPIs) that can measure its success going forward. Overall, your ability to work with a team determines the results you earn and the number of people affected by the decision your team made.

6;Emotional Intelligence

Emotional intelligence makes you critically aware of your emotions, and you can express them in a way that encourages action. Your emotions should lay the groundwork for your inspiration regarding a specific cause or mission that motivates you. However, the way you analyze data on the subject matter is going to dictate how well-informed you are when making your final decision.

7;Creativity

Your creativity harnesses your logical and emotional thinking to generate a unique solution. You need to have trusted employees within your organization to exchange ideas to come up with short and long-term solutions. You can also use your creativity to frame the conversations you have with employees during meetings and the amount of time allocated to ensure that everyone's voice can be heard. Consider having weekly brainstorming sessions to maximize employees' creativity to gain noteworthy input.

8;Time management

Since decisions need to be made quickly, you have to outline the amount of time you have to make your decision. You always have to work within the confines of your situation, but time management allows you to structure how you can make a decision. If you make have to decide by the end of the week, you can spend the time on each stage of the decision-making process including possible actions and purposed solutions you can take.

9;Organization

Organization is vital in your making a final decision. You should use this skill to find out what results you're looking for and if it's a top priority. If you're giving surveys about your product, your priority is to gain feedback from your target audience and see if you're using the correct user personal for your marketing campaign.

.....THE END.....