**Course: Information system and data processing**

**Program: BS (SE)**

**Instructor: Muhammad Abrar Khan**

**Examination: Final paper**

**Total Marks: 50**

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**Name: Ussama Zahids ID:14895**

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

**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**.

Ans:

 **Systems:**

A system is a group of elements that are integrated with the common purpose of achieving an objective.

 **Example:**

Purchase and sales system.

 **Components of a system:**

Following are the components of the system:

* Input elements.

Raw data input to the computer system.

* Process

Computation, analysis, application of any model.

* Output elements.

Results of computation or analysis.

* Control mechanism.

Comparison of actual with expected.

* Feedback system.

Corrective action.

* Objectives.

Expected/Ideal output.

 **Types of Systems:**

1. **Open-loop-system.**
2. **Closed loop system.**
3. **Open systems.**
4. **Closed systems.**

**Open-loop-system:**

The determinant factor is in an open loop system is that the information from the system not used for control purpose. This is done by using the output to generate feed back for control purposes.

* The output is not coupled to the input for measurement.
* Hence the components of open loop system do not include control and feedback mechanism due to non-existence of internally defined objectives. That is,
* Input.
* Process.
* Output.

**Example**

An information system that automatically generates report on regular basis and are not used to monitor input or activities.

**Closed loop system:**

* + - * Is a system where part of the output is fed back to the system to initiate control to change Either the activities of the system or input of the system
			* Has the ability to control the output due to existence of.
			* Control Mechanism.
			* Feedback System.
			* Objectives.

**Example**

Budgetary control system in a company by which

* + - * The results are communicated through feedback system.
			* Results are compared with the objectives/budget through controls mechanism.

**Open Systems**

* + - * A system that is connected to its environment by means of resource flows is called an open system.
			* The environment exerts influence on the system and the system also influences the environment.

**Example:**

* + - * Business is a system where management decisions are influenced by or have an influence on suppliers, customers, society as a whole.
		- Computerized system of a manufacturing entity, that takes influence from the society

**Closed systems**

* A system that is not connected with its environment.
* Neither environment exerts any influence one the system nor does system influence the environment.

**Example:**

* An information system designed to control data in a research laboratory is a closed system.
* An information system designed to record highly sensitive information is a closed system so as
* To accept no input for amendment.
* To give no output for disclosure.

**Real life example of system:**

1. **The book store:**
* **Open Loop:** if customer feedback is not taken for the purchase of book for the store Or.
* **Closed Loop:** if customer feedback/interest is taken into account when selecting the books to be purchased and displayed in the store.
1. **The School library:**
* **Open Loop:** if students’ feedback is not taken for the kind of books to be stocked in the library.
* **Closed Loop:** if students’ interest is the determinant criteria for the kind of books that are to be carried out in the library.
1. **Open system:**

Under open system organization theory, the characteristics of open system organization are shaped by **specific and general environmental influences**. Specific influences are the people and groups the organization deals with on a regular basis: customers, suppliers, distributors, regulators and competitors

 **Example:**

 example of open system organization are the many businesses that respond to their environment. Some change their policies under pressure, such as when a company fires a leader who's been charged with sexual harassment.

1. **Closed system:**

The system in which mass as well as energy can transfer during the any polytropic process those system are called open system.

**Example:**

The system in which only energy can transfer during the any polytropic process those system are called close system.Like boiling water in a air tight pan, a vcrs refrigeration system is also a good example.

**Q.2**

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

Ans:

 **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.

**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

**MIS organization example:**

 **UNILIVER**

* Unilever is one of the world’s best known consumer goods companies. Every day, 2.5 billion people use their products to feel good, look good and get more out of life. Unilever is truly global, operating in more than 100 countries, selling products in more than 190 countries and employing around 169,000 people.
* Unilever is organized in four categories, each with a clearly defined strategy and portfolio of brands. The largest is Personal Care, then Foods followed by Home Care and Refreshment. Unilever has around 400 brands allowing them to operate both globally and locally and this scale offers efficiencies and lower costs while reducing risk and mitigating volatility.
* Unilever has a business strategy view which captures its strategic goals that drive the company forward. Unilever built a strategy to help them achieve their purpose of making sustainable living commonplace.

**Q.3**

**Explain Marketing Information system and its types in detail.**

 **Note: You should make your answer understandable by taking a proper example.**

**Ans:**

 **Marketing information system:**

MKIS is a type of Information System that helps the firm to achieve following objectives:

* Identification of customers for firm‘s products and services.
* Development of those products and services to meet customers’ needs
* Promotion of the products and services, and
* Provision of after sale customer support.

**Types of MKIS:**

1. **Marketing intelligence.**
* Information flowing from environment into the environment.
1. **Internal information.**
* Gathered with the firm.
1. **Marketing communication.**
* Info flowing from firm to external environment An MKIS help in proper management and dissemination of all three kinds of information

**Example:**

A system that analyzes and assesses marketing information, gathered continuously from sources inside and outside an organization. Timely marketing information provides basis for decisions such as product development or improvement, pricing, packaging, distribution, media selection, and promotion.

A certain amount of marketing information is being gathered all the time by companies as they engage in their daily operations. When a sale is made and recorded, this is marketing information that’s being gathered.

**Q.4**

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

Ans:

 **Decision making:**

Decision making has a very huge role in an organization there for, the organizations created a system for such decision taking purposes known as decision support system (DSS) where the system is used to support managerial decisions. Usually DSS involves the analysis of many units of data in a heuristic fashion. As a rule, DSS processing does not involve the update of data.

For any scenario all the related factors with their ranges of variability are entered into DSS, which helps guide managers for any new scenario that emerges. DSS can stimulate innovation in decision making by helping managers to existing decision-making procedures.

**Example**

a company in which fact-based decision-making is the norm – not the exception. It is basically part of everyone’s DNA in Google. Googlers (that is what Google calls its employees) speak the language of data as part of their culture. In Google the aim is that all decisions are based on data, analytics and scientific experimentation.