

MCA Ist Year IInd Sem. IInd Mid Term Examination, April– 2018

**Subject: SAD** [Maximum Marks: -20]

Time: -2 Hrs. [Min. Passing Marks: 08

Instructions to Candidates: -

**Attempt all questions. Marks of questions are indicated against each section.**

**Q. 1 Answer following question in 1-2 lines. (1\*5=5)**

1. What is Structure English.

Ans:- Structure English is derived from structured programming language which gives more understandable and precise description of process. It is based on procedural logic that uses construction and imperative sentences designed to perform operation for action.

1. What is information Gathering Tool?

Ans:- information gathering is the act of collecting information from various sources through various means.

1. Define Input & output Design.

Ans:- input is the raw data that is processed to produce output. During the input design, the developers must consider the input devices such as PC, MICR, OMR, etc. In output design, developers identify the type of outputs needed, and consider the necessary output controls and prototype report layouts.

1. Explain Data Dictionary?

Ans:- A data dictionary is a structured repository of data elements in the system. It stores the descriptions of all DFD data elements that is, details and definitions of data flows, data stores, data stored in data stores, and the processes.

1. Define Feasibility Study.

Ans:- A feasibility study is an analysis of how successfully a project can be completed, accounting for factors that affect it such as economic, technological, legal and scheduling factors.

**Q. 2 Answer the following questions in 50 words each. (2\*2=4)**

1. Explain decision Table.

 Ans:- Decision Tables :- Decision tables are a method of describing the complex logical relationship in a precise manner which is easily understandable.

* It is useful in situations where the resulting actions depend on the occurrence of one or several combinations of independent conditions.
* It is a matrix containing row or columns for defining a problem and the actions.

###  Components of a Decision Table

* Condition Stub − It is in the upper left quadrant which lists all the condition to be checked.
* Action Stub − It is in the lower left quadrant which outlines all the action to be carried out to meet such condition.
* Condition Entry − It is in upper right quadrant which provides answers to questions asked in condition stub quadrant.
* Action Entry − It is in lower right quadrant which indicates the appropriate action resulting from the answers to the conditions in the condition entry quadrant.

 The entries in decision table are given by Decision Rules which define the relationships between combinations of conditions and courses of action. In rules section,

* Y shows the existence of a condition.
* N represents the condition, which is not satisfied.
* A blank - against action states it is to be ignored.
* X (or a check mark will do) against action states it is to be carried out.
1. What is Interview and Explain Type of Interview.

Ans:- a private meeting between people when questions are asked and answered. The person who answers the questions of an interview is called in the interviewer. The person who asks the questions of our interview is called an interviewer.

**The Telephone Interview**

Often companies request an initial telephone interview before inviting you in for a face to face meeting in order to get a better understanding of the type of candidate you are.

 **The Face-to-Face Interview**

This can be a meeting between you and one member of staff or even two members.
 **The Panel Interview** These interviews involve a number of people sitting as a panel with one as chairperson.

**The Group Interview**  You will be asked to interact with each other by usually a group discussion.

**The Sequential Interview**

These are several interviews in turn with a different interviewer each time. Usually, each interviewer asks questions to test different sets of competencies.

**Q. 3 Answer the following questions in 100 words each. (3\*2=6)**

1. Explain DFD with Example.

## Ans:- Data Flow Diagrams (DFD) or Bubble Chart

 It is a technique developed by Larry Constantine to express the requirements of system in a

 graphical form.

* It shows the flow of data between various functions of system and specifies how the current system is implemented.
* It is an initial stage of design phase that functionally divides the requirement specifications down to the lowest level of detail.
* Its graphical nature makes it a good communication tool between user and analyst or analyst and system designer.
* It gives an overview of what data a system processes, what transformations are performed, what data are stored, what results are produced and where they flow.

DFD Components

* **Entities** - Entities are source and destination of information data. Entities are represented by a rectangles with their respective names.
* **Process** - Activities and action taken on the data are represented by Circle or Round-edged rectangles.
* **Data Storage** - There are two variants of data storage - it can either be represented as a rectangle with absence of both smaller sides or as an open-sided rectangle with only one side missing.
* **Data Flow** - Movement of data is shown by pointed arrows. Data movement is shown from the base of arrow as its source towards head of the arrow as destination.
1. Explain Any Five input/output devices.

Ans :- (1) **Keyboard** : Keyboard is used in the input phase of a computer-based [information](http://ecomputernotes.com/fundamental/information-technology/what-do-you-mean-by-data-and-information) system. Keyboard is most common input device is used today. The data and instructions are input by typing on the keyboard. The message typed on the keyboard reaches the memory unit of a computer. It’s connected to a computer via a cable. Apart from alphabet and numeral keys, it has other function keys for performing different functions.

(2) **Mouse** : It’s a pointing device. The mouse is rolled over the mouse pad, which in turn controls the movement of the cursor in the screen. We can click, double click or drag the mouse. Most of the mouse’s have a ball beneath them, which rotates when the mouse in moved. The ball has 2 wheels of the sides, which in turn mousse with the movement of the ball. The sensor notifies the speed of its movements to the computer, which in turn moves the cursor/pointer on the screen.

(3) **Scanner** : Scanners are used to enter information directly in to the computers memory. This device works like a Xerox machine. The scanner converts any type of printed or written information including photographs into digital pulses, which can be manipulated by the computer.

(4) **Track Ball** : Track ball is similar to the upside- down design of the mouse. The user moves the ball directly, while the device itself remains stationary. The user spins the ball in various directions to effect the screen movements.

(5) **Light Pen** : This is an input device which is used to draw lines or figures on a computer screen. It’s touched to the CRT screen where it can detect raster on the screen as it passes.

(6) **Optical Character Rader** : It’s a device which detects alpha numeric characters printed or written on a paper. The text which is to be scanned is illuminated by a low frequency light source. The light is absorbed by the dark areas but reflected from the bright areas. The reflected light is received by the photocells

**Q. 4 Answer the following questions in 150 words. (5\*1=5)**

 Explain Steps of Feasibility Analysis.

 Ans:- Feasibility analysis involves eight steps:
**Form a project team and appoint a project leader**
The first step involves forming a project team. The team consists of analysts and user staff. In many cases, an outside consultant and an information specialist join the team until the job is completed.

**Prepare system flowcharts**
The next step in feasibility study is to prepare generalized system flowcharts for the system. Information oriented charts and data flow diagrams prepared in the initial investigation are reviewed at this time. The chart brings up the importance of inputs; outputs and data flow among key points in the existing system.

**Enumerate potential candidate systems.**
This step identifies the candidate systems that are capable of producing the outputs included in the generalized flowcharts. This requires a transformation from logical to physical system models. Another aspect of this step is consideration of the hardware that can handle the total system requirements

**Describe and identify characteristics of candidate system.**
In this step, the analysis is mainly based on what each candidate system can and cannot do. For determining this, technical knowledge and expertise in the hardware/software area are critical.

**Determine and evaluate performance and cost effectiveness of each candidate system.**
Here the analyst has to determine and evaluate the performance and cost of the candidate system. Evaluation for both design and implementation is performed here. It includes user training, updating the physical facilities and documenting etc.

**Weight system performance and cost data**
According to the performance and cost of the candidate system, some weight is given to each alternative of the system. Then the candidate system with the highest total score is selected.

**Select the best candidate system.**
The system with the highest total score is judged as the best system. This assumes the weighting factors are fair and the rating of each evaluation criterion is accurate.

**Feasibility report**

 After feasibility study, a document called feasibility report is prepared and is directed to the management. The report is a formal document for management use; it should be brief, and sufficiently nontechnical to be understandable.

 OR

 Explain Structural Analysis tools.

##  Ans:- Structured Analysis Tools :- During Structured Analysis, various tools and techniques

##  are used for system development.

* Data Flow Diagrams
* Data Dictionary
* Decision Trees
* Decision Tables
* Structured English
* Pseudocode

## Data Flow Diagrams (DFD) or Bubble Chart

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DFD Components

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## Data Dictionary

A data dictionary is a structured repository of data elements in the system. It stores the descriptions of all DFD data elements that is, details and definitions of data flows, data stores, data stored in data stores, and the processes.

A data dictionary improves the communication between the analyst and the user. It plays an important role in building a database. Most DBMSs have a data dictionary as a standard feature. For example, refer the following table −

|  |  |  |  |
| --- | --- | --- | --- |
| Sr.No. | Data Name | Description | No. of Characters |
| 1 | ISBN | ISBN Number | 10 |
| 2 | TITLE | title | 60 |
| 3 | SUB | Book Subjects | 80 |
| 4 | ANAME | Author Name | 15 |

## Decision Trees

Decision trees are a method for defining complex relationships by describing decisions and avoiding the problems in communication. A decision tree is a diagram that shows alternative actions and conditions within horizontal tree framework. Thus, it depicts which conditions to consider first, second, and so on.

Decision trees depict the relationship of each condition and their permissible actions. A square node indicates an action and a circle indicates a condition. It forces analysts to consider the sequence of decisions and identifies the actual decision that must be made.

## Decision Tables

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For example, refer the following table −

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| CONDITIONS | Rule 1 | Rule 2 | Rule 3 | Rule 4 |
| Advance payment made | Y | N | N | N |
| Purchase amount = Rs 10,000/- | - | Y | Y | N |
| Regular Customer | - | Y | N | - |
| ACTIONS |  |  |  |  |
| Give 5% discount | X | X | - | - |
| Give no discount | - | - | X | X |

## Structured English

Structure English is derived from structured programming language which gives more understandable and precise description of process. It is based on procedural logic that uses construction and imperative sentences designed to perform operation for action.

* It is best used when sequences and loops in a program must be considered and the problem needs sequences of actions with decisions.
* It does not have strict syntax rule. It expresses all logic in terms of sequential decision structures and iterations.