SOLUTION :- B-Tech. (Third semester) Exam - 2013
(CSE)
System Analysis and Design.

Section - A

1. (i) (c) Systems

(ii) (a) Accuracy

(iii) (a) System Implementation.

(iv) (b) Intangible Cost

(v) (a) Direct Cost

(vi) (c) Efficiency

(vii) (a) database

(viii) (a) Feasibility Study

(ix) (a) Interdependence

(x) (a) One to One.

Section - B

UNIT - I

2.(a) "System is an orderly combination or arrangement, as of parts or elements, into a whole; specifically, such combination according to some rational principle; any methodical arrangement of parts."

The Central Objective of the system is:-

In a System, the aim defined by an organisation is more important than that defined by a part.

It means the aim of the different units of a system is to attain the principal aim and not those ones decided by the units themselves.

(~~System~~) Analysis - In the analysis, the different processes to be completed by the system and a wide study of the relations of those processes inside and outside those systems is made.

→ In this, the possibilities of an excellent solution to the problem is marked out.

→ There is a question in mind of the analyst regarding what should be done to solve the problem.

→ In it, he has to ~~take the~~ make a serious study of the environment of the system and its boundary. For it, data are collected from different media.

Design - This is the most challenging task.

→ In this system, the ability of the system analyst is rightly used and the creative ability of the system analyst is also revealed.

→ In this, the performance specifications turns from into design specification.

→ In this the analyst sees to it that now the performance of the system determined in the phase of analysis be completed.

Ans. 2(E) System analyst play the role of politician & investigator as:-

(i) Politician:- Related to the role of motivator is that of politician. Diplomacy & finesse in dealing with people can improve acceptance of the system. As much as politician must have the support of his/her constituency, so is the analyst's goal to have the support of the user's staff. He/She represents their thinking and tries to achieve their goals through computerization.

(ii) Investigator:-

In defining a problem, the analyst pieces together the information gathered to determine why the present system does not work well and what changes will correct the problem.

In one respect this work is similar to that of an investigator - extracting the real problems from existing system and creating information structures that uncover previously unknown trends that may have a direct impact on the organization.

3.(a) UNIT-II

(i) Review of Written Document.

→ Search of the literature through pvede/ professional references and procedures manuals, textbooks, Company studies, government publications or Consultant studies may prove invaluables.

→ Procedures manuals and forms are useful sources for the analyst.

→ They describe the format and functions of the present system.

(ii)

3 m- Site Observation

① site observation is one of the most important data Collection techniques.

→ Observation is a technique, where the system analyst himself participates in a system or sees the activities done by the user happen on the system.

→ Site Observation is a very delicate technique of information collection.

→ site Observation must be done with the permision of the system operator, and there should be different time for observation.

→ Accurate planning and some experience are important for observation.

(X) ~~(ii) Review~~

UNIT - III

3. (b) Personal interview is considered the most important and the most general process of information gathering.

"Interview is such a data collection technique through which the analyst collects information from the people face to face.

→ Its purpose includes, fact finding, verifying the truth, generating enthusiasm, including the user, identifying the requirements and seeking for opinions on ideas.

Advantages of interview

(i) An interview gives the analyst an opportunity to motivate the interviewee so that he can answer the questions of the analyst outspokenly. The analyst through it, succeeds in building a relation with interviewee and encourages them to give active co-operation to the system project.

(ii) An interview helps an analyst get maximum feedback from the interviewee. Through an interview, the analyst helps each person put his questions in other words and in a more clarified form.

(3) Through an interview a system analyst, besides the verbal Communication of the interviewee, gets an insight into his body languages and other gestures and comes to have much more information from it.

⇒ Types of interview:-

The interview are of two types:-

(1) Structured interview:- In the structured interview the interviewer has a set of questions to be put before the interviewee.

(2) An unstructured interview is required to be Conducted when there is a general ~~purpose~~ subject or purpose in the mind and certain specific questions have to be clarified. In such interviews, the interviewer fully depends on the interviewee who makes framework of rules and directs the Conversation.

UNIT - IV

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3.(C) System Planning

Before we accomplish a task, we prepare a successful plan about it. The development of a system starts with a efficacious plan.

A successful planning is the key to the success of business. Todays, business without information is almost a failure.

Reasons for System Planning :-

(1) High Interest Rate :- To initiate a business on a big scale one's own capital is not enough. For it, the outer sources have to be included in capital building. Among outer sources, government bank or private bank, are the principal ones. If one borrows from these firms or people a fixed amount must be given to them as interest. Therefore it must be taken care of that one gets maximum benefit on the investment.

(2) Inflation :- Price hike & inflation lay pressure upon a company to gain a better profit ratio.

(3) Lack of Resources :- Today, the unavailability of sufficient resources is the greatest difficulty of a company or a commercial unit.

(4) Regulatory Constraints :- There are many rules and policies of the government which hinders the companies in launching their products in the market.

(5) Competition :- Today products are available with same quality but at different price-rates.
Competitions compells companies to produce better quality products at low cost.

UNIT-III

4-(a)(i) DFD stands for Data Flow Diagram.

(ii) DFD is an important tool of structured analysis which was evolved by Larry Constantine.

(iii) Data Flow Diagram is a complete network which describes the data flow in the whole system, Data stores and mentions there processes which changes the flow of data.

Advantages:-

① DFD can be expressed by means of an attractive graphical notation that makes them easy to use.

② It is an important modelling tool that allows us to picture a system as a network of functional process.

③ ~~DFD~~ Can Data can be ~~a~~ organized in several ways:

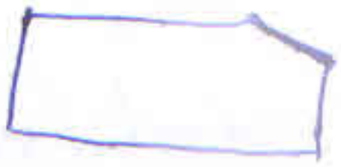
③ Symbols used in DFD:

(1) Functional symbol:- A function is represented using a circle. This symbol is called a process or a bubble or performs some processing of input data.

(2) External Entity :- a Square defines a source of destination of system data. External Entities represent any entity that supplies or receives information from the system but is not a part of the system.

(3) ~~Data flow symbol :-~~

(3) output Symbol :- It is used to represent data acquisition and procedures during human computer-interaction.



(b) System Requirement Specification :- ~~The data~~ The Requirements Specifications are the set of functionalities and Constraints that the end-user (who will be using the system) expects from the system.

So, the aim of system requirement Specification is to understand the exact requirem of the customer & to document them, properly.

The data Collected from group of users usually Contain several contradictions & ambigu

since, each user typically has only a partial view of the system. It is necessary to identify all ambiguities & contradictions in requirements and resolve them.

After all ambiguities, inconsistencies, and incompleteness have been resolved and all the requirements properly understood, the requirements specification activity can start. During this activity, the user requirements are systematically organized into a software requirements specification (SRS) document.

Importance of SRS document.

(1) This is very important document. all possible requirements of the system to be developed are captured in this.

(2) It serves the purpose of guideline for the next phase. so it is very important.

(3) In Design phase, requirements specified in the SRS document is transform into a structure that is suitable for implementation in some programming language.

(4) Likewise, testing phase is also depend on SRS docunent. testing ~~for~~ ensures that the developed system confirms to its requirements laid out in the SRS document.

4 (c) ~~Decision table is a tabled technique of describ~~

4.c

Decision table	Decision tree.
(1) It is a tabled technique of describing the logical rules.	(1) A decision tree is a chart like a Network. (Tree like structure)
(2) It is well linked.	(2) It is less well linked than Decision table.
(3) difficult to understand as comparision to decision table.	(3) It provides an easily understandable picture.
(4) It has Condition stub, Condition entry, Action Stub, action entry.	(4) It has rbf.

Explaination :- Decision table has basic format as.

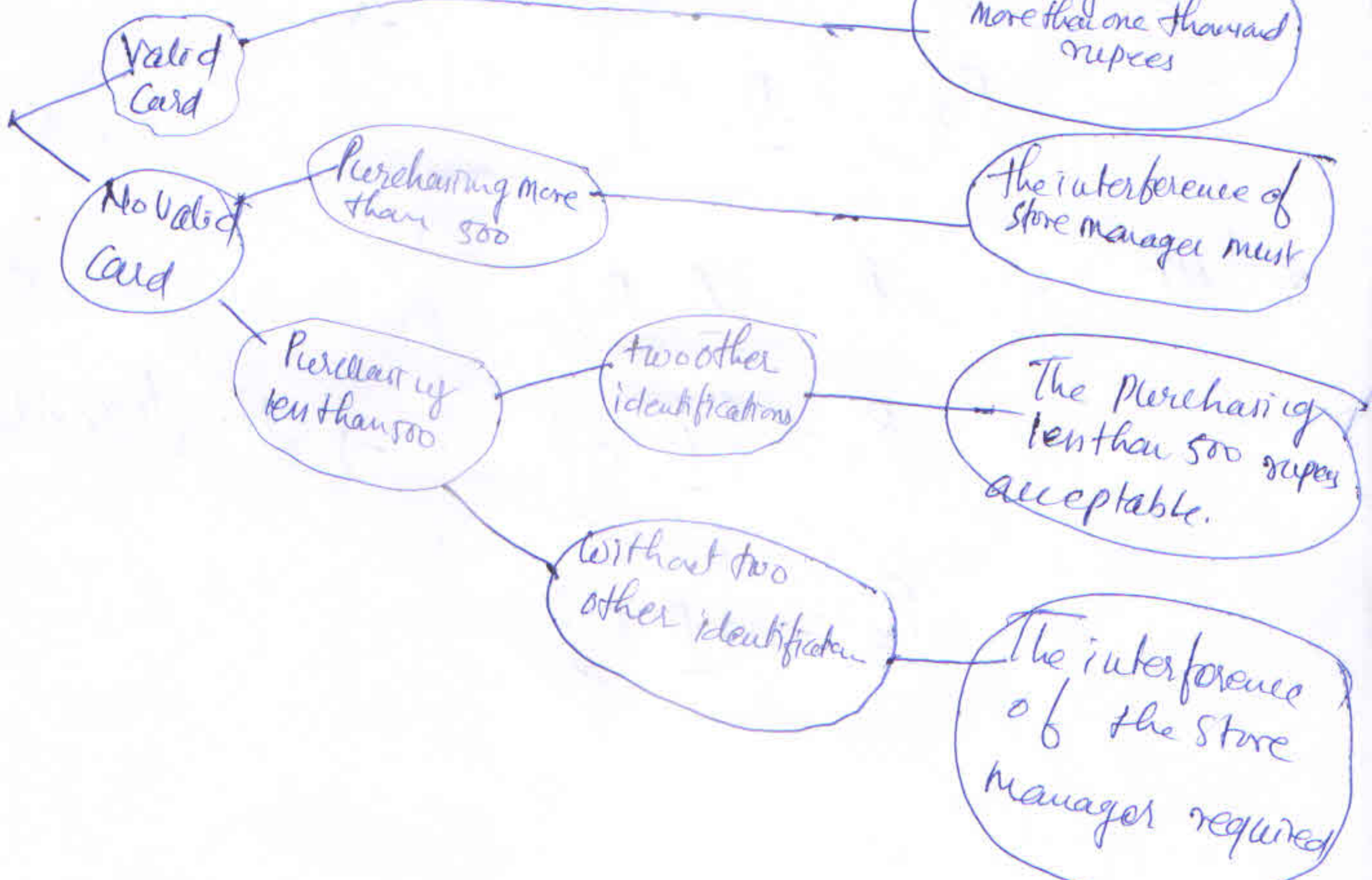
~~Condition Stub~~ :- Condition stub, Condition entry, action Stub, action entry.

example & explanation :- If the customer has a valid credit card, and the purchasing is not more than 500 rupees and the customer has two identifications, then the cheque of the purchasing amount be accepted.

Cheque Cashing Policy

	1	2	3	4
Valid store Id Card	Y	~~N~~	N	N
Purchase => 500		N	N	Y
two other identifications.		Y	N	
Purchase > 1000		X		
Allow Purchase amount			X	
Call Store manager			X	X

Decision tree :-



UNIT-V

5.(a) example

$R = \{A, B, C, D, E\}$

$A \rightarrow B$

$B \rightarrow C$

$D \rightarrow E$

1st NF → $R = (\underline{AD}, B, C, E)$ { fonctional dependency of primary key }

2nd NF ⇒ $R_1 = \{\underline{A}, B, C\}$

$R_2 = \{\underline{D}, E\}$

} ⇒ No Partial dependency

3rd NF ⇒ $R_1 = \{\underline{A}, B\}$

$R_2 = \{\underline{B}, C\}$

$R_3 = \{\underline{D}, E\}$

} ⇒ No transitivity.

5.(b) Objective of File Organization

→ A file is organized to ensure that records are available for processing.

→ There are four methods of organizing files:-

① Sequential file Organization
② Indexed - Sequential file Organization
③ Inverted list file Organization.
④ Direct Access method.

P.T.O.

Direct Access

⇒ In direct access file organization, records are placed randomly throughout the file.

⇒ Records need not be in sequence because they are updated directly and rewritten back in the same locations based on software commands.

⇒ Records are accessed by addresses that specify their disk locations.

Addresses are of two types :- absolute and relative

An absolute address represents the physical location of the record. It is usually stated in the format of sector/track/record number.

A relative address gives a record location relative to the beginning of the file. There must be fixed length records for reference.

~~Indexed - Sequential Organization.~~

Inverted List Organization

⇒ The indexed - Sequential method has a multiple index for a given key, whereas the inverted list method has a single index for each key type.

In an inverted list, records are not necessarily stored in a particular sequence. They are placed in the data storage area, but indexes are updated for the record keys and location.

⇒ It can be seen that multiple inverted lists are best for applications that request specific data on mutiple keys.

⇒ They are ideal for static files because additions and deletions cause expensive pointer updating.

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5.(c) Structured Design is a data flow based method. This method starts with system specification which identifies the input & output and describes the functional aspects of the system.

⇒ The structured design divides the program in to small independent modules.

⇒ This modules are arranged in a hierarchy which brings one module of the busines area close and is organized in top-down method. ~~the description of which~~

→ Structured design is a process which minimises the complications and divides the problem into small manageable fragments which is called modularization.

⇒ The design is called top-down when it is made on the module of hierarchy and each module has an entry and an exit like routine.

⇒ The documentation tool is hierarchy or structure chart for structured design. It is a graphical tool to represent the hierarchy and it has three elements.

(1) Module :- It represents each the name of the rectangle. It is a contiguous set of elements.

(2) Connection :- The Connection is represented by a vector which connects two modules.

(3) Couple :- Couple is represented by an arrow with a Circular tail. It represents the transfer of data items from one module to the other module.

UNIT-V

6. (a) five Quality factor Specification :-

(i) Correctness :- Correctness, means to what extent the program completes the purpose of the user and system specification.

(ii) Reliability :- Reliability stands for to what degree the system in a given time performs the expected task.

(iii) Effeniency :- The quality of necessary Computer resources required by a program to perform a task.

(iv) Usability :- The necessary effort made in learning and operating the System.

(v) Maintainability :- This factor is related to finding out the errors of the program and how easy it is to correct them.

6. (a)

Training

→ According to a particular concept the work performed to enhance the knowledge and capacity of the personnel to perform some specific task, is called training.

"Training is a kind of program which provides this facility to the personnel that he completes the entrusted task properly with the help of that knowledge and capacity which has been enhanced by training."

→ "Training is a continuous and well-arranged developmental step, which enhances the knowledge and capacity of the personnel of every strata which helps in the development of the people and the company."

Elements of Training :-

→ Continuous process.
→ Better utilization of knowledge and potential
→ Enhancing current knowledge and potential to

~~fulfill~~ fulfil the future requirements.

→ Preparing the personnel to carry out responsibilities.

Continuous Process ;-

→ Training is a Continuous process.

→ The personnel of the organisation need knowledge and potential to do their work efficiently which can be provided only through training.

⇒ Better Utilisation of knowledge and potential ;-

→ The training enhances the knowledge and potential of the personnel, so that they can utilise their knowledge and skill in performing the organisational responsibilities efficiently.

Importance and Needs of Training :-

The following description clarifies the requirement and importance of training :-

→ Unavailability of skilled workers - The most difficult task in any organisation is the availability of skilled workers.

→ It is very difficult to have skilled staff at every strata of the organisation.

→ For it, the organisation selects those of its staff who need less or no training.

→ After it those skilled workmen train the unskilled ones to improve their quality.

* Making the workers fit for the Job :-

→ In an organisation such a person is appointed who is not fit for the job.

→ A person is provided a kind of trainning in the organisation which makes him fit for the job.

6.(c) Testing (Quality assurance in testing phase)

⇒ The aim of quality assurance in this stage is to ascertain the wholeness and accuracy of the system and minimising the possibility of re-testing.

9n Implementation phase!-

⇒ Its purpose in the implementation phase, is to provide the logical order of System Creation.

9n Maintenance phase!-

⇒ The quality assurance, in this stage develops a procedure for the elimination of objective error and software enhancement.

This procedure enhances the quality assurance by encouraging Complete reporting and logging of the problem, ensuring it that the reported problem is in no time sent to the appropriate group for solving