Q: Explanation of Decision Tree & Decision Table?

Ans: **Decision Tree:** A decision tree is a specific type of flow chart used to visualize the decision-making process by mapping out different courses of action, as well as their potential outcomes.

Decision trees typically consist of three different elements:

- **Root Node:** The top-level node represents the ultimate objective or big decision you're trying to make.
- **Branches:** Branches, which stem from the root, represent different options—or courses of action—that are available when making a particular decision. They are most commonly indicated with an arrow line and often include associated costs, as well as the likelihood to occur.
- **Leaf Node:** The leaf nodes—which are attached at the end of the branches—represent possible outcomes for each action. There are typically two types of leaf nodes: square leaf nodes, which indicate another decision to be made, and circle leaf nodes, which indicate a chance event or unknown outcome.

Decision Table: A Decision Table is a table that shows the relationship between inputs and rules, cases, and test conditions. It's a very useful tool for both complicated software testing and requirements management. The decision table allows testers to examine all conceivable combinations of requirements for testing and to immediately discover any circumstances that were overlooked. True(T) and False(F) values are used to signify the criteria.

Q: Explanation of DFD with symbols

Ans: A data flow diagram shows how data is processed within a system based on inputs and outputs. Visual symbols are used to represent the flow of information, data sources and destinations, and where data is stored. Data flow diagrams are often used as a first step toward redesigning a system. They provide a graphical representation of a system at any level of detail, creating an easy-to-understand picture of what the system does. A general overview of a system is represented with a context diagram, also known as a level 0 DFD, which shows a system as a single process. A level 1 diagram provides greater detail, focusing on a system's main functions. Diagrams that are level 2 or higher illustrate a system's functioning with increasing detail. It's rare for

a DFD to go beyond level 2 because of the increasing complexity, which makes it less effective as a communication tool.

Data Flow Diagram Symbols

DFD symbols are consistent notations that depict a system or a process. It entails the use of short-text labels, arrows, circles and rectangles to describe data flow direction. Also forming part of DFDs are varied sub-processes, data storage points, and data inputs and outputs.

A data flow diagram has four basic elements. The elements include external entities, data stores, processes, and data flows. The elements are best represented by the two main methods of notation used in DFDs – **Yourdon & Coad**, and **Gane & Sarson**. DFD symbols vary slightly depending on methodology. Even so, the basic ideas remain the same.

1. External entities are represented by squares as the source or destination of data.
2. Processes are represented by rectangles with rounded corners in Gane & Sarson method and circle in Yourdon & Coad method.
3. Data Flows are referred to by arrows to denote the physical or electronic flow of data.
4. Data Stores are physical or electronic-like XML files denoted by open-ended rectangles.