

**Modern Education Society's
Wadia College of Engineering, Pune-01
Department of Computer Engineering**

NAME OF STUDENT:	CLASS:
SEMESTER/YEAR:	ROLL NO:
DATE OF PERFORMANCE:	DATE OF SUBMISSION:
EXAMINED BY:	EXPERIMENT NO: 06

TITLE- Expert System

PROBLEM STATEMENT:

Implement any one of the following Expert System,
1. Medical Diagnosis of 10 diseases based on adequate symptoms.

OBJECTIVES:

1. To understand, what is Expert System.
2. To understand the implementation of Expert system.

PRE-REQUISITES:

A system that uses human expertise to make complicated decisions. Simulates reasoning by applying knowledge and interfaces. Uses expert's knowledge as rules and data within the system. Models the problem-solving ability of a human expert.

Components of an ES:

Knowledge Base

- i. Represents all the data and information imputed by experts in the field.
- ii. Stores the data as a set of rules that the system must follow to make decisions.

Reasoning or Inference Engine

- i. Asks the user questions about what they are looking for.
- ii. Applies the knowledge and the rules held in the knowledge base.
- iii. Appropriately uses this information to arrive at a decision.

User Interface

- i. Allows the expert system and the user to communicate.
- ii. Finds out what it is that the system needs to answer.
- iii. Sends the user questions or answers and receives their response.

Explanation Facility

- i. Explains the systems reasoning and justifies its conclusions.

THEORY:

In artificial intelligence, an **expert system** is a computer system that emulates the decision-making ability of a human expert. Expert systems are designed to solve complex problems by reasoning through bodies of knowledge, represented mainly as if-then rules rather than through conventional procedural code. The first expert systems were created in the 1970s and then proliferated in the 1980s. Expert systems were among the first truly successful forms of artificial intelligence (AI) software. An expert system is divided into two subsystems: the inference engine and the knowledge base. The knowledge base represents facts and rules. The inference engine applies the rules to the known facts to deduce new facts. Inference engines can also include explanation and debugging abilities.

QUESTIONS:

1. What is an Rule based Expert System.
2. How to do analysis of Data Sets.
3. Explain in detail what is problem Decomposition.
4. What are the principle components of expert system.