Roll No. ..... Total No. of Pages : 2

Total No. of Questions : 09

B.Tech. (IT) (Sem.–6)

EXPERT SYSTEM

Subject Code : IT-312 (Elective-I)

Paper ID : [A0524]

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTION TO CANDIDATES :

1. **SECTION-A is COMPULSORY.**
2. **Attempt any FOUR questions from SECTION-B.**
3. **Attempt any TWO questions from SECTION-C.**

SECTION-A (10 × 2 = 20 Marks)

1. (a) List the features of expert systems.

   (b) What do you understand by semantic nets?

   (c) Explain knowledge representation techniques in brief.

   (d) Explain domain exploration methods.

   (e) What do you understand by fuzzy expert system?

   (f) What do you mean by prepositional logic? Explain with an example.

   (g) List the different types of expert systems.

   (h) Explain real time expert system.

   (i) List the various stages in the expert system development process.

   (j) Explain Fuzzy logic.

SECTION-B (4 × 5 = 20 Marks)

2. Write down the advantages of Expert system.
3. Write Short note on Neural Expert System.
4. If reasoning is done using semantic nets then what are its limitations? Explain with an example.

5. Describe and explain the Expert System Shell and its components.

6. Explain Expert System Development Process?

SECTION-C **(2 × 10 = 20 Marks)**

7. (a) Write a function in prolog that takes an integer *N*, as argument and return the sum of digits of integer *N*.

   (b) Explain the formulization methods of Knowledge Acquisition ?

8. You are given a set of rules for the given problem as: Should we buy a house or not?

   R1 **: IF** inflation is low

   THEN interest rates are low

   ELSE interest rates are high

   R2 **: IF** interest rates are high

   THEN housing prices are high.

   R3 **: IF** housing prices are high

   THEN do not buy a house

   ELSE buy it

   (a) Run a backward chaining with a high inflation rate as given.

   (b) Run a forward chaining with a low inflation rate as given.

9. Discuss various learning, planning and exploration methods in Expert Systems?