Expert Systems
(IT-312, Dec-2005)

Note: Section A is compulsory. Attempt any four questions from Section-B and any two from Section-C.

Section-A

1. a) What is meta knowledge?
   b) Describe the process of automated rule induction.
   c) Define fuzzy logic. Why it is useful?
   d) Describe some of limitations of expert system.
   e) What is an inference rule?
   f) Explain why backward chaining is considered goal-driven?
   g) Describe the general process of dealing with uncertainty.
   h) List the phases in the expert system development life cycle.
   i) What is the process of interviewing?
   j) What is the difference between a shell and a programming environment?

Section-B

2. What are the advantages of rule induction as an approach to knowledge acquisition?
3. Discuss the conditions that are necessary to ensure success when an expert is his or her own knowledge engineer.
4. Explain the statement "Every parent is a child of a higher level parent".
5. Provide an example that shows how a semantic network can depict inheritance.
6. Discuss the characteristics of a real-time expert system.

Section-C

7. Discuss ES development life cycle phases. Compare the ES development life cycle phases to the Simon four phase decision making model. How do the phases overlap?
8. (a) Create a rule base to determine whether a particular job-city combination would be acceptable to you after graduation. What factors did you use? What do the rules tend to indicate? Were there any holes in your knowledge?
   (b) Discuss briefly the features of Prolog.
9. (a) What are scripts? Prepare a script about a examination system.
   (b) Compare knowledge representation to data representation in a database.