

## **Expert Systems (IT-312, Dec-2007)**

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

### **Section-A**

1. a) Name the various stages in the expert system development process.
- b) What are real time expert systems?
- c) What do you mean by shallow knowledge?
- d) Differentiate between structured and unstructured interviews.
- e) What is propositional logic? Give example.
- f) Define a semantic network.
- g) List the various knowledge representation methods.
- h) List the types of expert system.
- i) What do you understand by the term knowledge engineering?
- j) What is a ready made Expert System?

### **Section-B**

2. What do you mean by prototype construction? Discuss specific purposes of the prototype.
3. Discuss how reasoning is done using semantic nets. What are its limitations?
4. Discuss the primary purposes of the formalization phase in the development process.
5. Write down the main features of the expert system shell as an implementation tool.
6. Write down the benefits of Expert System.

### **Section-C**

7. Define Expert System. Explain the architecture of the Expert System.
8. (a) Formulate the following expression in predicate logic "studying expert systems is exciting and applying logic is very fun if you are not going to spend all of your time slaving over a terminal".  
(b) Explain the methods of knowledge acquisition.
9. (a) Write a function in Prolog that takes an integer  $n$  as argument and return sum of integers from 1 to  $n$ .  
(b) Define and describe fuzzy logic. For what kind of applications is suited?