

Roll No. ....

**333714(33)**

**B. E. (Seventh Semester)  
EXAMINATION, April-May, 2015  
(Old Scheme)**

**(Branch : IT)**

**ARTIFICIAL INTELLIGENCE AND  
EXPERT SYSTEMS**

*Time : Three Hours ] [ Maximum Marks : 80*

*[ Minimum Pass Marks : 28*

**Note : Answer all questions. Each question has four parts.  
Part (a) is compulsory. Answer any two parts from  
(b), (c) and (d).**

- 1. (a) List down the characteristics of intelligent agent. 2
- (b) Explain the concept of planning with state space search using suitable examples. 7
- (c) Give an example of a problem for which breadth first search would work better than depth first search and vice-versa. Write advantages and disadvantages of breadth first search. 7
- (d) Define missionaries and cannibal problem with problem space and solve it. 7

- 2. (a) Define partial order planner. 2
- (b) Explain the use of planning graphs in providing better heuristic estimates with suitable example. 7
- (c) What is conflict resolution ? Illustrate with an example in any production system. 7
- (d) Write short technical notes on the following : 7
  - (i) AO\* algorithm
  - (ii) Hill climbing
- 3. (a) What is script ? 2
- (b) Draw conceptual dependency. Draw it for the following : 7  
"John wanted Mary to go shop."
- (c) Draw the semantic net for the following given statements : 7  
"Scooter is a two wheeler and it is a moving vehicle. Vehicle needs an engine, a fuel system to sustain. The engine running, an electric system for its lights, horn and breaks."
- (d) Describe in detail the steps involved in the knowledge engineering process. 7
- 4. (a) Give general approaches to natural language process. 2
- (b) State the Bayes theorem for all problem with uncertainty. Give the concept of Bayesian Network with example. 7

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- (c) Define natural language processing. Why there is need for natural language processing ? What are the two major methods of NLP system ? 7
- (d) Write short technical notes on the following : 7
- (i) Planning
  - (ii) Certainty factor
5. (a) Is 'MYCIN' use a frame system to represent mathematical concept ? 2
- (b) What are the characteristics of an expert system ? Draw a block diagram of an expert system and describe each block briefly. Show how does the working of an expert system differ from a traditional software. 7
- (c) Write down four expert systems with these use. Write a short note on any *one* successful expert system. <http://www.csvtuonline.com> 7
- (d) Write short notes on the following : 7
- (i) Rote learning
  - (ii) Knowledge Acquisition

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