B.E. SEM VII / CBGS / IT / MAY 2017

25/05/2017

Q.P. Code : 790800

(3 Hours) **[Total Marks : 80**

N.B. : (1) Question **No.1** is **compulsory.**
(2) Attempt **any three** out of remaining **five.**

1. (a) Explain forward chaining. **4**
(b) Explain steps in state space search formulation. **4**
(c) Discuss Heuristic function using suitable example. **4**
(d) Explain goal based agent with diagram. **4**
(e) Explain in brief Expert System Shell. **4**

2. (a) You have two neighbours, John and Mary, who have promised to call you at work when they hear the alarm. John always calls when he hears the alarm, but sometimes confuses the telephone ringing with the alarm and calls then, too. Mary on the other hand, likes rather loud music and sometimes misses the alarm altogether. Given the evidence of who has or has not called, we would like to estimate the probability of a burglary. **10**
Draw a Bayesian network for this domain with suitable probability tables.

(b) Describe Hill climbing Algorithm. What are its limitations ? **10**

3. (a) Represent the following sentences in First Order Logic:- **10**
(i) Every gardener likes the sun.
(ii) You can fool some of the people all of the time.
(iii) All purple mushrooms are poisonous.
(iv) Every student who takes French passes it.
(v) No person buys an expensive policy.

(b) What is prolog ? Write Prolog program for generating Fibonacci series. **10**

4. (a) Compare and contrast BFS & DFS. And explain the search strategy developed to overcome the drawbacks of both. **10**
(b) Explain Learning Agent with diagram. Also explain inductive learning. **10**

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5. (a) Explain WUMPUS world with diagram. State PEAS descriptors for it. **10**
   (b) Explain Min max and Alpha beta pruning algorithms for adversarial search with example. **10**

6. Write short notes on (**Any Four**) **20**
   (a) Game Playing
   (b) A* algorithm
   (c) Partial Order planning
   (d) Supervised and unsupervised learning
   (e) Predicate Logic.
