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Roll No .....

**CS-5005 (3) (CBGS)****B.E. V Semester**

Examination, November 2018

**Choice Based Grading System (CBGS)****Artificial Intelligence***Time : Three Hours**Maximum Marks : 70*

- Note:** i) Attempt any five questions.  
 ii) All questions carry equal marks.  
 iii) Assume suitable value for missing data, if any.

1. a) Describe various task of AI. What types of characteristic should hold the good production system?  
 b) Discuss the block world problem with their production rule.
2. a) How do we minimize the total estimated solution cost using A\* search? Explain.  
 b) Explain Heuristic function and its advantage for optimal search.
3. a) Define heuristic knowledge. Explain the knowledge representation techniques in AI.  
 b) Describe Unification algorithm for predicate logic and differentiate Backward chaining and Forward chaining.
4. a) Construct the predicate logic for the following:
  - i) John likes all kind of food.
  - ii) Apples are food.
  - iii) Chicken is food.
  - iv) Anything anyone eats and is not killed by is food
  - v) Bill eats peanut and still alive.
  - vi) Sue eats everything Bill eats.

- b) What is refutation? Prove that John Likes Peanuts using backward chaining.
5. a) Explain partition semantic network and represent the semantic net for the following reasoning:
  - i) Emu are Birds
  - ii) Typically birds fly and have wings
  - iii) Emus run
- b) Explain classes and object in frame and give advantages and disadvantages of frame?
6. a) Construct the conceptual dependency representation of the following.
  - i) John gives Mary a book.
  - ii) Ram gave flower to Sita.
- b) Mention the frame manipulation primitives. Define forward and backward chaining. Differentiate the same.
7. a) Name some prominent expert system give their advantages.  
 b) Explain min-max search procedure. Discuss the applications of neural network in Medical field.
8. Explain the following:
  - i) Common sense and Reasoning
  - ii) Backtracking
  - iii) Application of Natural language Processing
  - iv) Fuzzy logic Proposition and Membership function

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