B.E. Sixth Semester (Computer Science & Engineering) (C.B.S.)

Artificial Intelligence

P. Pages : 2 **KNT/KW/16/7406**

Time : Three Hours * 0 1 0 4 * Max. Marks : 80

Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Due credit will be given to neatness and adequate dimensions.
9. Assume suitable data whenever necessary.

1. a) What are different Artificial Intelligence problem domains? Discuss different examples for each domain and analyze these examples with the help of seven characteristics of AI Problem. **9**

b) State the advantages and disadvantages of DFS and BFS. **5**

OR

2. a) State A* algorithm. Explain with example. **7**

b) Explain AO* algorithm with an example. **7**

3. a) Explain Best first searching with example. Also give its advantages and disadvantages. **7**

b) Explain Generate and test in detail. **6**

OR

4. a) Explain Hill - climbing algorithm. Discuss its advantages and disadvantages. **7**

b) What is mean by problem reduction? Explain with example. **6**

5. a) Consider the following sentences : **10**

i) John likes all kinds of food.

ii) Apples are food.

iii) Chicken is food.

iv) Anything anyone eat and isn't killes by is food.
Bill eats peanuts and is still alive. Sue eats everything Bill eats.

a) Translate these sentences into predicate logic.

b) Convert the formulas of part into clause form.

c) Prove that John likes peanuts using resolution or back word chaining.

b) Explain the concept of conceptual dependency in short. **3**

OR

6. a) What are semantic network? What are the Properties of semantic N/W? **7**

b) Differentiate between procedural and declarative knowledgebase. **6**

7. a) How to resolve the issue of uncertain knowledge? **7**

b) What is rational decisions? For what purpose it is used? **7**

OR

8. a) Explain Baye's rule in detail. **7**

b) Write short note on : - **7**
1) Fuzzy logic.
2) Axioms of probability.
3) Bayesian Networks.

9. a) Draw and explain the important modules of general learning model. **7**

b) Draw a block diagram of knowledge acquisition process and components. **6**

OR

10. a) What is rate learning? Explain in detail. **7**

b) Explain what is mean by "learn by examples". **6**

11. a) Define expert system? Write its characteristic features. Also give the block diagram architecture of expert system. **7**

b) Give an example of the use of metaknowledge in expert system inference. **6**

OR

12. a) Explain different components of expert system. **7**

b) What is expert system shell? Explain in detail. **6**

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