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

AI (Artificial Intelligence)

P. Pages : 2 **NRT/KS/19/3490**

Time : Three Hours * 0 6 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.
10. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Explain the task domains of artificial intelligence. **6**

b) Explain problem characteristics with suitable example. **7**

OR

2. a) Compare & contrast between BFS and DFS. **6**

b) A hungry monkey find himself in a room in which a bunch of bananas is hanging from the ceiling. The monkey, unfortunately can cannot reach to bananas. However in room there are also a chair and stick. The monkey know how to use the chair & stick to take bananas. What is the best sequence of action for the monkey to take the bananas for lunch. **7**

3. a) What is simulated Annealing? Explain in brief. **7**

b) Explain hill climbing algorithm. **7**

OR

4. a) Explain A* algorithm in detail. **7**

b) Explain Means-end analysis. **7**

5. a) What is constrain satisfaction? Trace the constrain satisfaction procedure by solving the following cryptarithmetic problem. **7**

APPLE + LEMON = BANANA

b) Explain with neat diagram the mapping between facts and representation. **6**

OR

6. a) Write a short note on. **6**
i) Inheritable knowledge.
ii) Difference approaches of knowledge representation.

b) Consider following sentences & convert-into formulas in predicate logic. **7**

i) Apples are food. ii) Chicken is food.
iii) Bill eats apple & is still alive. iv) Sue eats everything Bill eats.

7. a) Discuss how to resolve the issue of uncertain knowledge. **7**

b) Write a short note on Bayesian Network. **6**

OR

8. a) Discuss Bayes theorem of probability in detail. **7**

b) What is semantic net? Draw semantic net for following also find V(S), A(S) and $\lambda(S)$. **6**
"Heart is a part of cardiovascular system"
"Artery is a part of cardiovascular system"
"large artery is an artery".

9. a) Draw & explain block diagram of learning models. **7**

b) Explain the types of learning with example. **7**

OR

10. a) What are the factors affecting learning performance explain in detail. **7**

b) Explain the advantages of keeping knowledge base separate from control module in knowledge based system. **7**

11. a) Explain knowledge acquisition process with the help of block diagram. **7**

b) With the help of block diagram explain components of typical expect system. **6**

OR

12. a) What is expert system shell? Also explain the use of metaknowledge in expert system inference. **7**

b) Explain natural language processing and types of grammar used in NLP. **6**

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