B.E. (Computer Technology) Seventh Semester (C.B.S.)

Artificial Intelligence

P. Pages : 2 **TKN/KS/16/7565**

Time : Three Hours * 0 9 5 9 * 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. Assume suitable data whenever necessary.
9. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) List various task domains of AI. **4**

b) Explain the characteristics of AI problems with the help of suitable example. **10**

OR

2. a) What are the different issues in the design of search programs. **7**

b) What are intelligent agents? Draw and explain generic architecture of intelligence agents. **7**

3. a) Discuss the importance of heuristic search over conventional search. **3**

b) Represent the following facts in FOPL and convert them into clause form. Use resolution technique to find that Ravi is spy. **10**

i) One of Raman, Ravi, Raghu and Ramesh is spy.
ii) Raman is not spy.
iii) Spies were light coloured dresses and do not attract attention of others.
iv) Raghu was wearing a dark coloured suit.
v) Ramesh was the centre of attention of that evening.

OR

4. a) Explain mean-end analysis with the help of robot example. **6**

b) What are the problems of hill climbing? How they are overcome? **3**

c) Explain constraint satisfaction with some example. **4**

5. a) Construct the semantic network for following sentence. **5**
"Every mail carrier was bitten by a dog".

b) Give the difference between monotonic and non-monotonic reasoning systems. **4**

c) Write short note on "Fuzzy logic". **4**

OR

6. a) Write a script for restaurant. **7**

b) Explain Bayesian network with an example. **6**

7. a) Draw and explain block diagram of learning system. **7**

b) Compare knowledge based expert system with rule based expert system. **6**

OR

8. a) Explain with a neat diagram various components of a typical expert system. **7**

b) State and explain the various types of learning. **6**

9. a) What is parsing? Explain any two types of parsing in NLU. **5**

b) Explain the Minmax search procedure with illustration of following: **9**

- One /Two play search
- Backing UP
- Alpha /Beta cut-off

OR

10. a) What are the types of grammar? Explain each of them. **6**

b) What are the different ways in which ambiguity results in a natural language statement? Give an example of each. **8**

11. a) Explain the life cycle of Genetic Algorithm. **7**

b) Write down different applications of neural networks. **3**

c) Define : **3**

i) Artificial Neural Network. ii) Genetic Algorithm.

OR

12. a) Explain in detail knowledge representation in ANN. **7**

b) Write short note on. **6**

i) Genetic operator. ii) Neural learning.

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