K21P 0425

Reg. No. : .....

Name : .....

IV Semester M.C.A./M.C.A. (Lateral Entry) Degree (CBSS – Reg./Supple. (Including Mercy Chance)/Imp.) Examination, May 2021
(2014 Admission Onwards)
Elective – II : MCA4E05 : ARTIFICIAL INTELLIGENCE

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer **any ten** questions. **Each** question carries **three** marks. **(10×3=30)**

1. Mention the importance of reference rules in AI.
2. What is the use of heuristic functions ?
3. How to improve the effectiveness of search based problem solving technique ?
4. What are the issues of agent based problem solving ?
5. How can you represent the resolution in predicate logic ?
6. Compare informed and uninformed search with examples.
7. Differentiate forward chaining and backward chaining.
8. What is active and passive reinforcement learning ?
9. State the advantages of inductive learning.
10. State the advantages of perceptron learning.
11. What are the significant features of genetic algorithm ?
12. How machine translation systems are implemented ?

P.T.O.

SECTION – B

Answer **all** questions. **Each** question carries **ten** marks. **(5×10=50)**

13. a) Briefly explain inference rules to produce predicate calculus expression. **10**

OR

b) Illustrate a possible result of Heuristic search procedure by defining a suitable Heuristic function for an eight puzzle problem. **10**

14. a) What do you mean by state space representation of a problem ? Illustrate how you can represent following water jug problem as a state space search : There are two jugs (without any measuring marks on them) of 4 and 3 liters capacity, respectively. There is a tap of water to fill the jugs. The objective is to fill the 4-liter jug with exactly 2 liter of water. **10**

OR

b) List and describe the problem characteristics that need to be considered for selecting appropriate heuristic for a given class of problem. **10**

15. a) Briefly explain design issues and merits of blackboard architecture for problem solving with suitable example. **10**

OR

b) Explain the use of planning graph in providing better heuristic estimation with suitable examples. **10**

16. a) Explain LISP and PROLOG for developing expert systems, explain with suitable examples. **10**

OR

b) Explain with neat diagram the architecture of expert system and mention its features. **10**

17. a) i) Explain learning in decision tree with example. **5**

ii) Explain about knowledge acquisition. **5**

OR

b) How hypotheses formed by pure inductive inference or induction ? Explain with examples. **10**