

[5254]-185

B.E. (Information Technology)
ARTIFICIAL INTELLIGENCE
(2008 Pattern) (Elective - I)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) Answers to the TWO sections should be written in separate sheet.*
- 2) Use of logarithmic tables, slide rules and electronic pocket calculator is allowed.*
- 3) Neat diagram must be drawn wherever necessary.*
- 4) Figures to the right indicates full marks.*
- 5) Assume suitable data, if necessary.*

SECTION - A

- Q1)** a) Explain intelligence and Artificial intelligence systems. How do they distinguish? [8]
- b) Explain how Swarm Intelligent systems work? Give suitable example to justify your answer. [8]

OR

- Q2)** a) What is agent? Discuss about the various kinds of agents and their properties with neat diagram. [8]
- b) What is Turing test? Why it is done? [8]

- Q3)** a) Discuss the tic-tac-toe problem in detail and explain how it can be solved using AI techniques? [8]
- b) Explain A* algorithm with an example. What are the limitations of A* algorithm? [8]

OR

- Q4)** a) Compare and contrast Hill climbing with simulated annealing search. [8]
- b) With a neat diagram, explain Alpha-Beta pruning method. [8]

P.T.O.

- Q5) a)** Explain unification algorithm with suitable illustration. [9]
- b)** Represent the following sentences using symbolic logic: [9]
- i) A drunker is enemy of him-self.
 - ii) Father of John loves the mother of Merry.
 - iii) All students like a good teacher.
 - iv) Fruits and vegetables are nutritious.
 - v) God helps those who help themselves.

Also explain the problems with predicate logic.

OR

- Q6) a)** Briefly explain semantic Network. Also give semantic nets to describe the following: [9]
- Nilesh is a writer
- Nilesh lives in Bombay
- Ishwar is a teacher
- Ishwar lives in Bangalore.
- Nilesh sent a copy of his book to Ishwar
- Ishwar sent his thanks to Nilesh.
- b)** Explain reasoning under uncertainty with suitable example. [9]

SECTION - B

- Q7) a)** What is for Blocks World Problem? Give an example heuristics function for Blocks World Problem. [8]
- b)** What is non linear planning? Explain with suitable example. [8]
- OR
- Q8) a)** What is object recognition in computer vision? What are the applications of object recognition? [8]
- b)** What are the different components of planning system? Explain them briefly. [8]

- Q9) a)** What do you understand by learning? Explain the various forms of learning. [8]
- b) What is an expert system? Explain its various parts. [8]

OR

- Q10)a)** What are the salient activities required in knowledge acquisition system achieved through interaction between domain experts? Explain with example. [8]
- b) What do you understand by Expert system Shell? Explain in details with example. [8]
- Q11)a)** Explain structured data representation in prolog. Also explain what are the data structures available in prolog? [9]
- b) What are the features of prolog language? Name the areas in which prolog programming language is used? [9]

OR

- Q12)a)** Define the terms chromosome, fitness function, crossover and mutation as used in Genetic Algorithms. Explain how Genetic Algorithms works? [9]
- b) Write a program to find that the year entered through user is a leap year or not using prolog. [9]

