Exam.Code:0460
Sub. Code: 3615

2071
M.Sc. (Information Technology)
Second Semester
MS-67: Artificial Intelligence

Time allowed: 3 Hours Max. Marks: 80

NOTE: *Attempt five questions in all, including Question No. IX (Unit-V) which is compulsory and selecting one question each from Unit I - IV.*

x-x-x

UNIT – I

I. a) Consider you have designed a new AI technique to solve a problem. How would you know that you have achieved a success? List the different criteria used to compare your technique with other AI techniques.

b) What are simple reflex agents? Describe their architecture. (10,6)

II. What do you mean by strengthening of constraints? Explain the constraint satisfaction algorithm for solving crypt arithmetic problems. (16)

UNIT - II

III. a) What is First order logic? Explain the purpose of quantifiers.

b) Convert following sentences into clause form and prove the truth of statement "Ram is Intelligent" using resolution.

i) Ram is Human

ii) Ram is Scientist

iii) All Scientists Are Intelligent

iv) All humans are not intelligent (6,10)

IV. a) What is the use of conceptual dependency? How would you represent "Farmers Fertilized the Fields"?

b) Explain a recursive Min-Max algorithm? Describe the use of rating function in it. (2x8)

UNIT - III

V. What is the use of working memory in Expert Systems? Describe different components of an expert system. (16)

P.T.O.

VI. a) Explain the different phases of Natural Language Processing? How pragmatic analysis and Discourse analysis are different? Illustrate using an example.

b) What is computer Vision? Describe the low level features that can be extracted from images. (10,6)

UNIT - IV

VII. a) Write a program in Prolog to implement a simple binary search algorithm to search a number from a list.

b) What are the different data structures used in Prolog? (10,6)

VIII. a) Represent the following set of predicates in Prolog:-

i) Animal need Food.

ii) Lion is a carnivore.

iii) Carnivore cats animal.

iv) Goat is an Animal.

v) All carnivores are animals.

Use resolution to Prove that of "Lion eats Goat"

b) Describe 'Towers of Hanoi' Problem? (12,4)

UNIT - V

IX. Attempt the following:-

a) What are production rules?

b) List the solutions to local maxima of Hill climbing algorithm.

c) What are slots in frames?

d) Give any two advantages of Scripts.

e) What are Horn clause?

f) How control statements are used in prolog.

g) What do you mean by perception?

h) Which algorithm is used for learning in Neural Network? (8x2)

x-x-x