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020402

May,2023

B. TECH (RAI)- IV SEMESTER

Artificial Intelligence (PCC-RAI-402-21)

Time: 3 Hours

Max. Marks:75

Instructions:

1. *It is compulsory to answer all the questions (1.5 marks each) of Part -A in short.*
2. *Answer any four questions from Part -B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART -A

Q1 (a) What is the criterion to check the success of a machine? (1.5)

(b) Represent the knowledge about "Cricket National player using semantic net". (1.5)

(c) Differentiate between FOPL over PL? (1.5)

(d) List the various approaches used in knowledge representation. (1.5)

(e) What are the main problems in hill climbing search? (1.5)

(f) List out STRIPS style operators? (1.5)

(g) Write short note on Explanation based learning. (1.5)

(h) Why heuristics search is preferred over brute force search techniques? (1.5)

(i) What is difference between syntactic and semantic processing. (1.5)

(j) Explain the role of quantifiers in predictive calculus. (1.5)

PART -B

Q2 (a) Discuss various approaches and issues in knowledge representation? (5)

(b) What a note on how artificial neuron models from the biological neuron. Also explain different type of learning in ANN. (10)

Q3 (a) Write a script for shopping mall and explain it. (10)

(b) What is difference between Alpha vs Beta pruning? (5)

Q4 (a) Differentiate forward and backward Channing. (5)

(b) Write MINMAX algorithm with example. (10)

Q5 (a) Explain different levels of knowledge used in language understanding. (5)

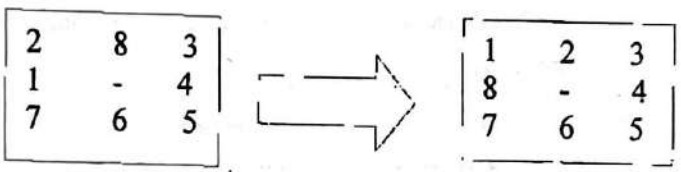
(b) Consider the following piece of knowledge (10)

- Mohan, Krishan and Sanjay are members of the Sports club.
- Every Sports club member who is not a runner is a cricket player.
- Cricket players do not like rains
- Anyone who does not like the walk is not a runner
- Krishan dislikes whatever Sanjay dislikes and likes what Krishan likes
- Krishan likes walking and running.

Represent the knowledge as predicate statements. Process the query "Is there a sports club member not a cricket player but a runner." Using resolution by refutation method.

Q6 What is an Expert System? Can Expert System do mistakes? Give architecture and working of Rule Base Expert System? (15)

Q7 (a) What are different problems with Hill Climbing and how are they resolved? Solve the following problem using Hill Climbing. (10)



(b) Write short note on Augmented Transition Network. (5)