

END TERM EXAMINATION

SIXTH SEMESTER [BCA] JUNE 2024

Paper Code: **BCA -312** Subjects: **Artificial Intelligence**
Time: **3 Hours** Maximum Marks: **75**
Note: **Attempt all questions as directed. Internal Choice is indicated.**

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UNIT -III

- Q6 (a) What is NLP? Discuss the component of NLP. (8)
 (b) Differentiate between context free grammar & context sensitive grammar. (4.5)

OR

- Q7 Discuss the followings: (12.5)
 (a) Explanation based learning
 (b) Rote learning
 (c) Learning by taking advice

UNIT -IV

- Q8 (a) What is expert system? Write the characteristics of a good expert system. (8)
 (b) Explain MYCIN expert system (4.5)

OR

- Q9 (a) What is LISP? Explain the basic building blocks of with examples. (8)
 (b) Write a LISP program to find average of four numbers. (4.5)

(5x5=25)

- Q1 Attempt any five:
 (a) Differentiate between strong AI & weak AI?
 (b) Differentiate between Heuristic Search & Uninformed Search.
 (c) Define Tautology, Unsatisfiable, Satisfiable & Equivalence statements.
 (d) Explain all connectives used in predicate logic.
 (e) Write Converse, Inverse & Contrapositive of the conditional statement: "Indian team wins whenever match is played in Kolkata, home town of Ganguali".
 (f) What is the difference between A* & AO* algorithm

UNIT -I

- Q2 (a) What is production system? Discuss the production rules and solution for the "Water Jug Problem". (8)
 (b) Differentiate between Depth First Search and Breadth First Search (4.5)

OR

- Q3 (a) What is Constraint satisfaction problem? Trace the constraint satisfaction procedure to solve the following cryptarithmic problem.

$$\begin{array}{ccccccc} & & & S & E & N & D \\ & & & + & M & O & R & E \\ \hline & & & M & O & N & E & Y \end{array}$$

- (b) What is Turing test? Explain with diagram. (4.5)

UNIT-II

- Q4 (a) Explain the various issues in knowledge representation. (8)
 (b) What is knowledge representation? Discuss various knowledge representation schemes. (4.5)

OR

- Q5 Write the following sentences in predicate logic and convert to CNF (12.5)

- John likes all kind of food.
- Ram likes every thing John likes.
- Everyone is loyal to someone.
- Fruits and vegetables are delicious.
- God helps those who help themselves.
- Jack and Jill went up the hill.
- All students like good teachers.
- All the glitters is not gold.
- Some employee are sick today.
- All Romans were either loyal to Caesar or hated him.
- Some people are honest.
- People only try to assassinate rulers they are not loyal to

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