

**B. Tech. Sem -VIII (E & TC Engg.) (2014 COURSE) (CBCS)
WINTER - 2018**

SUBJECT: ELECTIVE-II ARTIFICIAL INTELLIGENCE AND ROBOTICS

Day: Friday
Date: 16/11/2018

W-2018-2682

Time: 02.30 PM TO 05.30 PM
Max. Marks: 60

N.B:

- 1) All questions are **COMPULSORY**.
 - 2) Figures to the right indicate **FULL** marks.
 - 3) Draw neat labeled diagrams **WHEREVER** necessary.
-

- Q.1** Explain the following with respect to Tic-Tac Toe: (10)
- | | |
|--------------------|--------------------------|
| i) Complexity | iii) Extensibility |
| ii) Generalization | iv) Clarity of knowledge |

OR

Write down an approximate algorithm for solving Tic-Tac Toe?

- Q.2** Write down an algorithm for Depth first search? Explain it with an example (10)

OR

Write heuristic functions for travelling salesman and chess problem?

- Q.3** Write down an algorithm for backward chaining? (10)

OR

Describe the database of a cricket team using frames.

- Q.4** Explain the following with respect to non-monotonic reasoning: (10)
- | | |
|-----------------------------|-----------------------------------|
| i) Frame problem | iii) Default logic |
| ii) Closed world assumption | iv) Inadequacy of classical logic |

OR

Draw the geometric visualization of fuzzy sets?

- Q.5** Sketch the following manipulator configurations: (10)
- | | | |
|----------|------------|-----------|
| i) TRT:R | ii) TVR:TR | iii) RR:T |
|----------|------------|-----------|

OR

What are the notations and configurations of robot system?

- Q.6** Write down the necessary equations to solve inverse kinematics of four Axis SCARA? (10)

OR

Write down the mathematical equations and also explain to obtain base angle for inverse kinematics of four Axis SCARA robots?

* * * * *