

**B. TECH. (CBCS - 2014 COURSE) SEM -VIII (E & TC ENGG.)  
: SUMMER - 2018**

**SUBJECT: ELECTIVE-II ARTIFICIAL INTELLIGENCE AND ROBOTICS**

Day: **Saturday**  
Date: **09/06/2018**

**S-2018-4727**

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** Describe the importance of Expert system? **(10)**

**OR**

Explain the following with respect to Tic-Tac Toe

- |                    |                          |
|--------------------|--------------------------|
| i) Complexity      | iii) Extensibility       |
| ii) Generalization | iv) Clarity of knowledge |

**Q.2** Differentiate between Depth first search and breadth first search? Explain it with an example **(10)**

**OR**

Discuss the role of FUTILITY in AO\* techniques?

**Q.3** Describe the database of a cricket team using frames. **(10)**

**OR**

What are the strategies adopted for conflict resolution?

**Q.4** Draw the geometric visualization of fuzzy sets? **(10)**

**OR**

Explain the following with respect to semantic nets:

- a) Neuron model b) Properties c) Applications d) Advantages

**Q.5** What are the parameters of classifications of root subsystem? **(10)**

**OR**

Sketch the following manipulator configurations:

- i) TRT:R ii) TVR:TR iii) RR:T

**Q.6** Write down the mathematical equations and also explain to obtain Roll angle for inverse kinematics of four Axis SCARA robots? **(10)**

**OR**

What is SCARA robot? Explain with necessary equations and diagrams.

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