

**B. Tech. Sem -VIII (E & TC Engg.) (2014 COURSE) (CBCS) :
SUMMER - 2019
SUBJECT: ELECTIVE-II ARTIFICIAL INTELLIGENCE AND ROBOTICS**

Day: Thursday
Date: 30/05/2019

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

S-2019-2947

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 following scenarios with respect to Robot: (10)
i) Reactivity ii) Robustness iii) Recoverability

OR

What problems we have to face in natural language processing? Explain.

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

OR

Write are the different heuristic techniques?

Q.3 Differentiate between forward and backward chaining? Give an example of each? (10)

OR

Draw the semantic network?

Q.4 Draw the flow chart of genetic algorithm and explain? (10)

OR

Explain the following with respect to non-monotonic reasoning:

- i) Frame problem iii) Default logic
- ii) Closed world assumption iv) Inadequacy of classical logic

Q.5 List down the common robot specifications? (10)

OR

What are the parameters of classifications of root subsystem?

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

OR

Differentiate between direct kinematics and inverse kinematics problem of serial robots?

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