

Total No. of Questions : 4]

SEAT No. :

**PA-10315**

[Total No. of Pages : 1

[6009]-447

**T.E. (E&TC) (Honors) (Insem)**

**HONORS IN ROBOTICS**

**Robot Programming & Simulation**

**(2019 Pattern) (Semester-II) (304183)**

*Time : 1 Hour]*

*[Max. Marks : 30*

*Instructions to the candidates:*

- 1) Answer Q.1 or Q.2, Q.3 or Q.4.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Assume suitable data, if necessary.
- 4) Figures to the right indicate full marks.

**Q1)** a) What is the basic difference between operating system and meta operating system? Explain features of ROS. [7]

b) Explain ROS framework in detail. [8]

OR

**Q2)** a) What is ROS equation. Describe in brief. [8]

b) Describe in brief why ROS is useful and what are its uses. [7]

**Q3)** a) Write a short note on motion interpolation. [5]

b) Write short note on various textual robot languages. [5]

c) Write short note on loading a machine. [5]

OR

**Q4)** a) Discuss a robot program as a path in space. [8]

b) Explain on line programming in detail. [7]

