**M. TECH.-IV (MECHANICAL CAD/CAM) (CBCS – 2015 COURSE) : SUMMER - 2018**

**SUBJECT: SELF-STUDY PAPER-II : c) ROBOTICS & SENSORS**

| | | | |
|---|---|---|---|
| Day : **Tuesday** | **S-2018-3134** | Time : | **11.00 AM TO 02.00 PM** |
| Date : **19/06/2018** | | Max.Marks : **60** | |

**N. B. :**

1) All questions are **COMPULSORY**.
2) Answers to both the section should be written in the **SEPARATE** answer books.
3) Figures to the right indicate **FULL** marks.
4) Draw neat and labeled diagrams **WHEREVER** necessary.

## SECTION - I

**Q.1** Explain in detail Robotic Automation. **(10)**

**OR**

Explain Socio Economic aspects of Robotization. **(10)**

**Q.2** Explain force analysis of mechanical and hydraulic gripper. **(10)**

**OR**

Compare various drive systems. **(10)**

**Q.3** Classify force sensors. Explain any one in detail. **(10)**

**OR**

Explain segmentation and region characterization object recognition by image matching. **(10)**

## SECTION - II

**Q.4** Explain Denavit Hartenberg parameters. **(10)**

**OR**

Explain Inverse kinematics in detail. **(10)**

**Q.5** Explain Image Acquisition Sampling. **(10)**

**OR**

Explain typical vision system for robots. **(10)**

**Q.6** Explain RPL, VAL and AL in detail. **(10)**

**OR**

How continuous path, via points and programmed points are used in demonstration of points in space. **(10)**

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190618-m-engineering-pune