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Bengaluru

Mid Term Examinations - October 2026

Date: 05/10/2026 **Time:** 02:00 PM - 03:30 PM

Course Code: MEC3449 **Course Name:** Robotics and Automation

Semester: Fifth/Third Semester **Max. Marks:** 50 **Weightage:** 50%

CO - Levels	CO1	CO2	CO3
Marks	10	40	40

PART A: Answer Following Questions. 10 M

Q.N.	Questions	M	CO	BT
1	What is robotics? Write two applications of robots.	2	CO1	BT1
2	Write down any four types of grippers used in Automated Industry.	2	CO1	BT1
3	Write the notation for cartesian and cylinderical body and arm assembly robot configurations.	2	CO1	BT1
4	What is SCARA robot and breifly explain about it.	2	CO1	BT1
5	Write the classification of robot with respect to the type of control system used.	2	CO1	BT1

PART B: Answer Any 1 Following Questions. 20 M

Q.N.	Questions	M	CO	BT
6	a)Elucidate the working principle of eddy current proximity sensor along with a proper diagram. Write the applications of eddy current proximity sensor. [10 Marks] b) Explain the working of Optical Encoders Sensors used in industrial robot with proper sketch. Write two applications for it. [10 Marks]	20	CO2	BT2
7	a) A Robotic engineer is planning to measure distance between object and robot by using sound as medium, suggest him what sensor should he use and explain the working principle for the same with neat sketch. [10 Marks] b) Elucidate the following definitions with respect to the performance of Sesnors in Robotic Systems. (i) eddy current detectors (ii) Calibration (iii) vision Sensors (iv) Voice Sensors (v) Linear variable differential transformer [10 Marks]	20	CO2	BT2

PART C: Answer Any 1 Following Questions. 20 M

Q.N.	Questions	M	CO	BT
8	a) List out the functions of Robotics vision systems and explain each of them. [10 Marks] b) Since the robotic vision system or machine vision system has been used widely in human robot interaction for non-verbal interaction, explain the working of robotic vision system along with neat sketch with all the components of it. [10 Marks]	20	CO3	BT2

9	a) Explain the detailed working of Optical proximity sesnor in the robotic systems with neat sketch. [10 Marks] b) Explain the different stages of Image processing and Sensing in robotic vision system working. [10 Marks]	20	CO3	BT2