Roll No. | | | | | | | | | | | | | **Total No. of Pages : 01**

Total No. of Questions : 08

M.Tech. (Computer Science Engg./Artificial Intelligence) (Sem.–2)

ADVANCE ROBOTICS

Subject Code : MTAI-104-20
M.Code : 92282
Date of Examination : 08-07-22

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :
1.Attempt any FIVE questions out of EIGHT questions.
2.Each question carries TWELVE marks.

1. Discuss the forward and inverse kinematics in Robotics for position analysis.
2. Discuss the role of sensors and actuators in Robotics and also explain the different types qf sensors and actuators used for different robotic applications.
3. Discuss the concept of control system and feedback for controlling the movements and functions of the Robot with the help of a diagram.
4. What is End Effector? Discuss three different types of End Effector and also discuss the factors for picking up the right End Effector a particular task.
5. a. "*Machine vision is usually linked with a computer's ability to see*". Justify this statement.

   b. Discuss different image processing methods used in a machine vision system.
6. Explain the different ways in which Robot can be programmed. Discuss the pros and cons of each method.
7. Discuss about the generations of Robot Programming. Explain about the MOVE, SPEED, PATH, END EFFECTOR, OPEN, CLOSE commands used in robotic programming.
8. Discuss the different characteristics and applications of Robotics. Through some light on their futuristic applications too.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

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