Roll No												

PRESIDENCY UNIVERSITY
BENGALURU

SCHOOL OF ENGINEERING
END TERM EXAMINATION - JAN 2023

Semester : Semester III - 2021
Course Code : MEC3060
Course Name : Sem III - MEC3060 - Robotics
Program : B.Tech. Mechanical Engineering

Date : 11-JAN-2023
Time : 1.00PM - 4.00PM
Max Marks : 100
Weightage : 50%

Instructions:
(i) Read all questions carefully and answer accordingly.
(ii) Question paper consists of 3 parts.
(iii) Scientific and non-programmable calculator are permitted.

PART A

ANSWER ALL THE FIVE QUESTIONS **5 X 2 = 10M**

1. What is end effector ?
(CO1) [Knowledge]

2. Define Jocobians ?
(CO2) [Knowledge]

3. What is Path generation method and what are the two scheme for path generation method.
(CO3) [Knowledge]

4. Define Hooks and Scoops Gripper ?
(CO4) [Knowledge]

5. Define Mechanical Actuator with suitable example.
(CO5) [Knowledge]

PART B

ANSWER ALL THE SIX QUESTIONS **6 X 10 = 60M**

6. Explain General classification of Robotics system ?
(CO1) [Comprehension]

7. Find the Jocobian matrix and singularity for the given 2 DOF Serial Manipulator
(CO2) [Comprehension]

8. A Single Link robot with a rotary joint is motion left at Ø=15 degree, it is desired to move on a joint in a smooth manner to Ø=75 degree in 3 Sec, find the co-efficient of a cubic that accomplishes the motion.

(CO3) [Comprehension]

9. What is Linear actuator ? expalin with neat skecth the types of Linear actuator.

(CO4) [Comprehension]

10. Define Robotics? Explain briefly the classification of robot manipulator.

(CO5) [Comprehension]

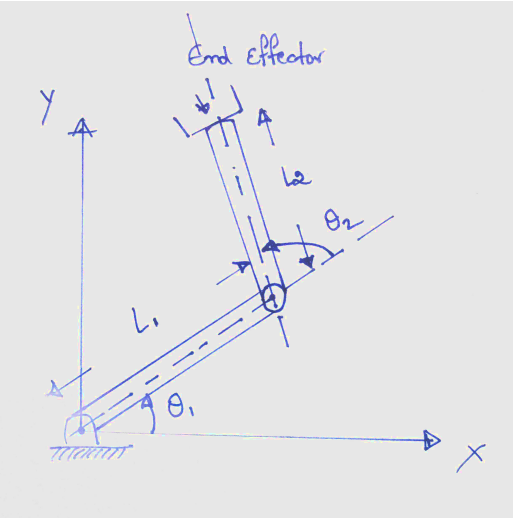
11. Expalin with neat sketch velocity propogation of the robot link?

(CO2) [Comprehension]

PART C

ANSWER ALL THE TWO QUESTIONS **2 X 15 = 30M**

12. Find the D-H Parameter of the given 2 DOF robot manipulator system.



(CO1) [Application]

13. Difine Grippers? Explain with neat sketch the types of grippers.

(CO2) [Application]

*****