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**PRESIDENCY UNIVERSITY BENGALURU**

**SCHOOL OF ENGINEERING SET-B**

**END TERM EXAMINATION – MAY/JUNE 2024**

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| **Semester :** Semester VI - 2021  **Course Code :** MEC3073  **Course Name :** Robotic System Design  **Program :** B. Tech. | **Date :** June 12, 2024  **Time :** 1:00 PM - 4:00 PM  **Max Marks :** 100  **Weightage :** 50% |

**Instructions:**

1. *Read all questions carefully and answer accordingly.*
2. *Question paper consists of 3 parts.*
3. *Scientific and non-programmable calculator are permitted.*
4. *Do not write any information on the question paper other than Roll Number.*

# PART A

|  |  |  |  |
| --- | --- | --- | --- |
| **1.**  **2.** | **ANSWR ANY 5 QUESTIONS**  **1.** What are Mechanical grippers?  **2**. What is robot chassis?  **3.** List different types of robot programming methods. | | **5Q X 2M=10M**  (CO1) [Knowledge]  (CO2) [Knowledge]  (CO3) [Knowledge]  (CO1) [Knowledge]  (CO2) [Knowledge]  (CO2) [Knowledge]  (CO3) [Knowledge] |
| **4**. Write a short note on Relays.  **5.** What are PCBs?  **6**. Write a short note on wheel chassis.  **7**. Explain wrist interface and its types. | **PART B** |
|  | **ANSWR ANY 5 QUESTIONS** | | **5Q X 10M=50M** |
| **8.** | **8**. List different types of gears and explain. | |  |

(CO1) [Comprehension]

1. Explain gripper force analysis. (CO2) [Comprehension]
2. With suitable diagram explain the working of DC gearless motor.

(CO3) [Comprehension]

1. What are rotary actuators? Explain.

(CO1) [Comprehension]

1. List out different factor to consider selection of gripper.

(CO2) [Comprehension]

1. With neat sketch explain translation gripper mechanism.

(CO3) [Comprehension]

1. What are the differences between online and offline programming?

(CO1) [Comprehension]

**PART C**

# ANSWR ANY 2 QUESTIONS 2Q X 20M=40M

1. List out different types of gripper mechanism. Explain any two.

(CO1) [Application]

1. With suitable diagram explain the working of Pneumatic gripper mechanism.

(CO2) [Application]

1. With suitable diagram explain wrist assembly and its features.

(CO3) [Application]