

Roll No



**PRESIDENCY UNIVERSITY
BENGALURU**

**SCHOOL OF ENGINEERING
MID TERM EXAMINATION - APR 2023**

Semester : Semester VI - 2020

Course Code : MEC3083

Course Name : Sem VI - MEC3083 - Mechatronics

Program : MEC

Date : 17-APR-2023

Time : 2PM - 3.30PM

Max Marks : 60

Weightage : 30%

Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Question paper consists of 3 parts.
- (iii) Scientific and non-programmable calculator are permitted.
- (iv) Do not write any information on the question paper other than Roll Number.

PART A

ANSWER ALL THE QUESTIONS

(5 X 2 = 10M)

1. Can we have a mechatronics system without a computer? Give reason for you answer also.
(CO1) [Knowledge]
2. Is the Generator an electro-mechanical device? Give your reason accordingly.
(CO1) [Knowledge]
3. What is a combined systems?
(CO1) [Knowledge]
4. Electrically controlled relay is an example of _____ level Mechatronics.
(CO2) [Knowledge]
5. What is a Load Cell ?
(CO2) [Knowledge]

PART B

ANSWER ALL THE QUESTIONS

(3 X 10 = 30M)

6. Explain the concept of feedback in mechatronics, and discuss the different types of feedback used in mechatronic systems, including positive and negative feedback.
(CO1) [Comprehension]

7. Explain the role of microcontrollers in mechatronics, and discuss their applications, advantages, and limitations.
(CO1) [Comprehension]
8. Parking sensors in the cars are used to measure the distance of the car from an object. Name any two types of sensors which can be used for this process and explain the working of any one sensor mentioned above.
(CO2) [Comprehension]

PART C

ANSWER THE FOLLOWING QUESTION

(1 X 20 = 20M)

9. a. Define transducer and explain the two classifications of transducers in detail.
b. What is Photo Electric Transducer and explain any one transducer which is based on Photo electric effect.

(CO2,CO1) [Application]