Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code: U3904

M.E. DEGREE EXAMINATION, NOV 2023

Professional Elective

CAD / CAM

21PCD504 - MECHATRONICS IN MANUFACTURING SYSTEMS

(Regulation 2021)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART - A (5 x 20 = 100 Marks)

1. (a) Explain the functioning of a closed loop system with a neat sketch   CO1- U   (20)
        for controlling the speed of a shaft

                                    Or

    (b) With an example explain the various functional units of a   CO1- U   (20)
        measurement system.

2. (a) Explain the temperature measurement using thermocouples.   CO1- U   (20)

                                    Or

    (b) Write a detailed note on pressure measuring system and pressure   CO1- U   (20)
        measuring transducer

3. (a) Discuss the mechatronic design of the pick and place robot with a   CO2- U   (20)
        neat control circuit

                                    Or

    (b) Explain detail about the traffic light controller with neat sketch   CO2- U   (20)

4. (a) With necessary diagrams, explain the automatic car park system   CO2- U   (20)

                                    Or

    (b) Describe with a neat diagram the stepper motor control using   CO2- U   (20)
        Microprocessor 8085.

5. (a) Discuss in detail about cylinder sequencing with PLC and its   CO3-App   (20)
        programming

<div align="center">Or</div>

    (b) Draw the ladder diagram for sequential cylinder using plc   CO3-APP   (20)
        application

U3904