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G.R. No.	
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DECEMBER 2021-ENDSEM EXAM
FINAL YEAR B. TECH. (MECH) (SEMESTER - VII)
COURSE NAME: ROBOTICS
COURSE CODE: IOEUA40184A
(PATTERN 2018)

Time: [1 Hour]

[Max. Marks: 30]

(*) Instructions to candidates:

- 1) Answer Q.1 OR Q.2, Q.3 OR Q.4, Q.5 OR Q.6.
- 2) Draw the diagrams where necessary.
- 3) Use of scientific calculator is allowed.
- 4) Use suitable data where ever required.

Q1. a Interpret the terms HMI, SCADA, IIOT, and Automation? 4 Marks

Q1.b Give a detailed account of your understanding of Encoder, its types and working. 6 Marks

OR

Q2.a Simplify working of Relay and find its areas of application? 4 Marks

Q2.b Plot your understanding of PLC, its use cases, types, and programming methods. 6 Marks

Q3. a Examine various types of coordinate systems used while programming the robot? 4 Marks

Q3.b Illustrate with example the Point-to-Point control and Continuous Path control robot? 6 Marks

OR

Q4.a Distinguish the advantages and disadvantages of Online and Offline Programming of Robot? 4 Marks

Q4.b Examine 3 types of interpolation and how do we use it in programming? 6 Marks

Q5. a Infer the factors that promote use of Robots in industry? 4 Marks

Q5.b Give a detailed account of different types of costs associated with installation of Robotic systems. 6 Marks

OR

Q6.a Dictate the formulae for calculation of payback period, downtime, and productivity? 4 Marks

Q6.b Infer the impacts of increased use of Robots on Individual, Society, Industry, Country and World? 6 Marks