

Reg. No.:

Name :



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MID TERM EXAMINATIONS – October – November 2023

Programme	: B.Tech.	Semester	: Interim 2023-24
Course Title	: Cyber-Physical Systems / CSD3010	Slot	: A11+A12
Time	: 1 ½ hours	Max. Marks	: 50

Answer all the Questions

Q.No.	Sub. Sec.	Question Description	Marks
1		Can you figure out the complicated components and choices needed to establish a strong IoT stack, as well as explain the fundamental technologies, protocols, and architecture for a Cyber-Physical System (CPS) utilised in the development of a project of your choice in the context of Cyber-physical system?	10
2	(a)	Define the Arduino Uno Architecture. How will you connect your sensors and actuators? Use an example to demonstrate your point.	5
	(b)	Could you elaborate on the critical role of real-time communication in Cyber-Physical Systems, and how it influences their operation and effectiveness?	5
3		How do the core principles and objectives of end-to-end system design manifest themselves when applied to the development of Cyber-Physical Systems (CPS)?	10
4		Give appropriate examples to illustrate worst-case execution time and real-time tasks.	10
5		Conceptualise the Lyapunov function and Lyapunov stability criteria for any non-linear system.	10

