KUMARAGURU
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B.E DEGREE EXAMINATIONS: APRIL / MAY 2023

(Regulation 2018)

Sixth Semester

ELECTRONICS AND COMMUNICATION ENGINEERING

U18ECE0054: Real Time Embedded Systems

COURSE OUTCOMES

CO1:   Compare the hardware and software architectures of Embedded Systems.

CO2:   Classify the I/O interface and protocols for an embedded system.

CO3:   Interpret the concepts of a real time operating system.

CO4:   Apply the concepts of Embedded programming.

CO5:   Develop steps to create an embedded system application integrating hardware and software.

Time: Three Hours   **Maximum Marks: 100**

Answer all the Questions:-
PART A (10 x 2 = 20 Marks)
(Answer not more than 40 words)

1.	What is Embedded system and what are the components of Embedded system?	CO1	[K₁]
2.	List out the hardware units in embedded system.	CO1	[K₁]
3.	Illustrate the bit format of UART protocol.	CO2	[K₂]
4.	Summarize the ways of communication between the ports or devices.	CO2	[K₂]
5.	Define NULL pointer.	CO4	[K₁]
6.	Write about Queue pointer. What is pointer in Embedded system?	CO4	[K₁]
7.	What is semaphore and its types?	CO3	[K₁]
8.	Show the task states of RTOS.	CO3	[K₂]
9.	What is GNU-GCC?	CO5	[K₁]
10.	List few simulators used in embedded systems.	CO5	[K₁]

Answer any FIVE Questions:-
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)

11.		Discuss about the embedded software in a system.	16	CO1	[K$_2$]
12.		Summarize about serial bus communication protocols.	16	CO2	[K$_2$]
13.		Elaborate on function queues and Interrupt service routine (ISR).	16	CO4	[K$_2$]
14.	a)	Write short notes on the memory managing strategy for a system.	8	CO3	[K$_2$]
	b)	Outline the three mailbox types at the different RTOS.	8	CO3	[K$_2$]
15.		Discuss the digital camera hardware and software architecture.	16	CO5	[K$_2$]
16.		Describe the various processors commonly used in embedded system.	16	CO1	[K$_2$]

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