KUMARAGURU
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B.E/B.TECH DEGREE EXAMINATIONS: NOV/DEC 2024

(Regulation 2018)

Sixth Semester

ELECTRICAL AND ELECTRONICS ENGINEERING

U18EEI6201: Embedded System

COURSE OUTCOMES

CO1: Understand the fundamentals of Embedded systems and its communication protocols.

CO2: Understand the basic concepts of RTOS for optimized CPU performance.

CO3: Understand the architectural features of ARM processor.

CO4: Apply the instructions to program ARM processor using Embedded C.

CO5: Analyze the internal peripherals of ARM processor using an IDE.

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

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

1.	Identify the major components of Embedded System.	CO1	[K$_2$]
2.	What are the features of the USB protocol?	CO1	[K$_2$]
3.	Classify the wireless and mobile system protocols.	CO1	[K$_2$]
4.	Name the types of RTOS.	CO2	[K$_1$]
5.	Summarize the importance of ARM architecture.	CO3	[K$_2$]
6.	What is Thumb in ARM processor?	CO3	[K$_3$]
7.	State the function of ARM Memory Management Unit.	CO3	[K$_3$]
8.	Define profiling and cycle counting in ARM LPC2148	CO4	[K$_3$]
9.	What is the function of watch dog timer in LPC2148?	CO4	[K$_3$]
10.	Identify the functions of UARTs.	CO5	[K$_4$]

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

11.	a)	Discuss about the embedded product life cycle in detail.	10	CO1	[K$_2$]
	b)	Summarize the communication devices and ports in Embedded system.	6	CO1	[K$_2$]

12.	a)	Explain the following serial communication protocols: I^2C and CAN in detail.	10	CO1	[K_2]
	b)	Discuss the different RTOS for Embedded systems.	6	CO2	[K_2]
13.	a)	Elaborate the special purpose registers in an ARM processor.	8	CO3	[K_2]
	b)	Briefly discuss the various ARM processor families.	8	CO3	[K_2]
14.	a)	Summarize the differences between the ARM and Thumb instruction sets.	6	CO4	[K_3]
	b)	Explain the ARM memory management unit and its features.	10	CO4	[K_3]
15.	a)	Write a program for LCD interfacing in LPC2148.	10	CO5	[K_4]
	b)	Discuss the important features of Keil IDE	6	CO5	[K_4]
16.	a)	Explain the conditional execution in ARM processor with an example.	8	CO4	[K_3]
	b)	Briefly discuss the function of timers and counters in ARM microcontroller.	8	CO5	[K_4]

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