KUMARAGURU
college of technology
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M.E / M.TECH/MCA DEGREE EXAMINATIONS: NOV/ DEC 2024

(Regulation 2024)

First Semester

EMBEDDED SYSTEMS TECHNOLOGIES

24ETT503: Real Time Operating Systems

COURSE OUTCOMES

CO1: Students will be able to analyze, design, and implement real-time systems that meet strict timing and performance requirements using appropriate scheduling algorithms and synchronization techniques.

CO2: Familiarize with key Real-Time Operating System terms and concepts

CO3: Comprehend and use tools to build an embedded real-time system.

CO4: Design and implement a simple embedded system.

CO5: Understand the concepts of various RTOS for Embedded system

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

PART A (4*20 = 80 Marks)

1.	a)	List out the types of system calls with an example in windows platform.	4	CO2	[K1]
	b)	Show the different operating system structures and label it.	4	CO2	[K1]
	c)	Describe the state of the process.	4	CO2	[K1]
	d)	What are the different accessing methods of a file?	4	CO2	[K1]
	e)	Recall the purposes of an operating system.	4	CO2	[K1]
2.	a)	Summarize the Remote Procedure Call.	4	CO2	[K2]
	b)	Contrast the distributed file system.	4	CO2	[K2]
	c)	Explain IPC.	4	CO2	[K2]
	d)	Show the factors to be considered for variations in client server model.	4	CO2	[K1]
	e)	Examine the design strategies to be considered for spontaneous networking.	4	CO2	[K4]
3.	a)	List out the different Real time models.	4	CO3	[K1]
	b)	What are the various scheduling criteria for RT scheduling?	4	CO3	[K1]
	c)	Recall the consequences of task states.	4	CO3	[K1]
	d)	Outline the characteristics of Real Time languages.	4	CO3	[K2]

	e)	Compare the Process based and Graph based models.	4	CO3	[K4]
4.	a)	Classify the types of RTOS.	4	CO5	[K4]
	b)	Explain the short notes on polled systems with interrupt.	4	CO5	[K2]
	c)	Compare the micro kernel and macro kernel.	4	CO5	[K2]
	d)	Select some of the features in Vx works.	4	CO5	[K1]
	e)	Demonstrate the architecture of QNX RTOS and label it.	4	CO5	[K2]

Answer any ONE Question
PART B (1*20 = 20 Marks)

5.	a)	Examine the RTOS for Control Systems in detail.	12	CO4	[K4]
	b)	Analyze the design issues about the RTOS image processing.	8	CO4	[K4]

OR

6.	a)	Explain the Embedded RTOS voice over IP systems in detail.	12	CO4	[K2]
	b)	Illustrate the various steps involved in Backup Overloading Scheduling Algorithm in fault tolerance.	8	CO4	[K2]

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