Reg. No.															

Question Paper Code	13687

M.E. - DEGREE EXAMINATIONS, APRIL / MAY 2025

Second Semester

M.E. - Embedded System Technologies

24PESPC201 - REAL TIME OPERATING SYSTEMS

Regulations - 2024

Duration: 3 Hours | Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks	K – Level	CO
1.	List any two functions of an OS.	2	K1	CO1
2.	What is inter-process communication?	2	K1	CO1
3.	Define Real-Time Operating System (RTOS).	2	K1	CO2
4.	What is critical section in RTOS?	2	K1	CO2
5.	Illustrate interrupt processing in RTOS.	2	K2	CO3
6.	Give the importance of synchronization in RTOS?	2	K1	CO3
7.	List the principles of an RTOS kernel.	2	K1	CO4
8.	What is RTOS porting?	2	K1	CO4
9.	Show the role of RTOS in embedded applications.	2	K1	CO5
10.	Define Embedded Operating System.	2	K1	CO5

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

			Marks	K – Level	CO
11.	a)	Describe the different types of system calls with examples.	13	K2	CO1
		OR			
	b)	Describe the concept of distributed scheduling.	13	K2	CO1
12.	a)	Explain multithreaded preemptive scheduling with an example.	13	K2	CO2
		OR			
	b)	With a neat sketch explain the states of an RTOS task.	13	K2	CO2
13.	a)	Compare event-based, process-based, and graph-based models.	13	K2	CO3
		OR			
	b)	Cite an example and explain Earliest Deadline first algorithm.	13	K2	CO3
14.	a)	Describe the key design issues in real-time kernels.	13	K2	CO4

OR

	b)	Discuss the process of porting an RTOS to a target system.	*13*	*K2*	*CO4*
15.	a)	Explain how uCOS-II is used in embedded applications.	*13*	*K2*	*CO5*
		OR			
	b)	Outline the development of RTOS applications using C Executive.	*13*	*K2*	*CO5*

PART - C (1 × 15 = 15 Marks)

16.	a)	Build a Yamba application using the main Android building blocks.	*15*	*K3*	*CO6*
		OR			
	b)	Develop an Android-based real-time system to manage home automation.	*15*	*K3*	*CO6*