Reg. No.														

Question Paper Code	13370

M.E. / M.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2024 (JAN - 2025)
First Semester
M.E. - Embedded System Technologies
24PESPC103 - DESIGN OF EMBEDDED SYSTEMS
Regulations - 2024

Duration: 3 Hours   Max. Marks: 100

PART - A (10 × 2 = 20 Marks)
Answer ALL Questions

		Marks	K-Level	CO
1.	How watchdog timers are different from conventional timers?	2	K1	CO1
2.	What are the different modes of DMA transfer?	2	K1	CO1
3.	List any four serial communication protocols.	2	K1	CO2
4.	Define Enumeration.	2	K1	CO2
5.	Give the limitations of the polling technique.	2	K1	CO3
6.	What is a vector table?	2	K1	CO3
7.	Why priority inversion a serious problem?	2	K2	CO4
8.	Compare RTOS lite and Full RTOS.	2	K2	CO4
9.	What is the need for Hardware-Software Partitioning?	2	K1	CO5
10.	Give the advantages of an emulator.	2	K1	CO5

PART - B (5 × 13 = 65 Marks)
Answer ALL Questions

11.	a)	Explain in detail about the selection of memory for an Embedded System.	13	K2	CO1
		OR			
	b)	Explain in detail about the Cache replacement policies.	13	K2	CO1

12.	a)	Explain how serial data transfer is performed in the I2C bus. Also, brief the steps involved in the transfer of a byte using I2C.	13	K2	CO2
		OR			
	b) i)	Briefly explain about input/output device ports and buses.	7	K2	CO2
	ii)	Compare RS 232, RS 422 and RS 485.	6	K2	CO2

13.	a)	Describe how multiple interrupts are handled by the devices.	13	K2	CO3
		OR			

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create   **13370**

b) Explain the importance of latency, deadline and context switching in embedded networking.   *13   K2   CO3*

14. a) Explain any two pre-emptive scheduling strategies with examples.   *13   K2   CO4*

OR

b) Explain in detail about the inter-process communication mechanism.   *13   K2   CO4*

15. a) Write short notes on the following:
   i) Compilers.   *7   K2   CO5*
   ii) Hardware and software debugging tools.   *6   K2   CO5*

OR

b) List the various UML diagrams and explain the purpose of each diagram.   *13   K2   CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Illustrate the objective, need, different phases and modeling of EDLC.   *15   K2   CO6*

OR

b) Elaborate the case study of Adaptive cruise control in a car.   *15   K2   CO6*