Reg. No.												

Question Paper Code	12367

M.E. / M.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2023

First Semester

M.E.-Embedded System Technologies

20PESPC103 - Design of Embedded Systems

(Regulations 2020)

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,K2,CO1*
2.	What is Direct Memory Access?	*2,K2,CO1*
3.	Compare RS232, RS422 and RS485.	*2,K2,CO2*
4.	Mention the main features of CAN bus.	*2,K2,CO2*
5.	Define interrupt latency.	*2,K1,CO3*
6.	Give the limitations of polling technique.	*2,K1,CO3*
7.	Is priority inversion a serious problem? Why?	*2,K2,CO4*
8.	Outline the features of RT Linux.	*2,K1,CO4*
9.	Give the advantages of emulator.	*2,K1,CO5*
10.	What is UML activity diagram?	*2,K2,CO5*

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Explain in detail about the Cache replacement policies.	*13,K2,CO1*
		OR	
	b)	Discuss in detail about different memory management methods.	*13,K2,CO1*
12.	a)	Explain how serial data transfer is performed in I^2C bus. Also brief the steps involved in transfer of a byte using I^2C.	*13,K2,CO2*
		OR	
	b)	(i) Explain the functions of device drivers.	*6,K2,CO2*
		(ii) List out the steps involved in writing a device driver.	*7,K2,CO2*
13.	a)	Explain about interrupt mechanism in detail.	*13,K2,CO3*
		OR	
	b)	Explain how polling is used to share an interrupt over several devices.	*13,K2,CO3*

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

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

OR

b) Explain the terminologies: Semaphores, Mail box, Pipes and Shared memory in RTOS. *13,K2,CO4*

15. a) Analyze the importance of each basic element in UML. *13,K3,CO5*

OR

b) Write short notes on Compilers and In-circuit Emulators. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Discuss the case study on Mobile Phone software for key inputs. *15,K2,CO6*

OR

b) Explain the objective, need and different phases of Embedded Product Development Life Cycle.(EDLC) *15,K2,CO6*