

HALL TICKET NUMBER

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PACE INSTITUTE OF TECHNOLOGY & SCIENCES::ONGOLE  
(AUTONOMOUS)

IV B.TECH I SEMESTER END SUPPLEMENTARY EXAMINATIONS, MARCH-2023  
EMBEDDED & REAL TIME OPERATING SYSTEMS  
(ECE Branch)

Time: 3 hours

Max. Marks: 60

Note: Question Paper consists of Two parts (Part-A and Part-B)

**PART-A**Answer **all** the questions in Part-A (5X2=10M)

Q.No.	Questions	Marks	CO	KL
1.	a) What is typical embedded system?	[2M]	1	1
	b) What is Schottky diode's role in embedded applications?	[2M]	2	1
	c) Write the execution steps for embedded firmware.	[2M]	3	1
	d) Define thread.	[2M]	4	1
	e) What is complier?	[2M]	5	1

**PART-B**Answer **One Question from each UNIT (5X10=50M)**

Q.No.	Questions	Marks	CO	KL
UNIT-I				
2.	a) Explain the onboard communication interfaces.	[5M]	1	2
	b) Differentiate Harvard architecture and Von-Neumann architecture.	[5M]	1	2
OR				
3.	a) List out different Quality attributes of embedded systems and explain them.	[5M]	1	1
	b) Explain the Domain-Specific examples of an embedded system in detail.	[5M]	1	2
UNIT-II				
4.	a) What is combinational circuit? Explain with example.	[5M]	2	1
	b) Explain briefly about wireless devices.	[5M]	2	2
OR				
5.	a) Explain briefly about watchdog timer.	[5M]	2	2
	b) What is multiplexer (mux)? Explain it.	[5M]	2	1
UNIT-III				
6.	a) Explain the advantages of assembly language based development.	[5M]	3	2
	b) Write a note on C versus embedded C and compiler versus cross compiler.	[5M]	3	1
OR				
7.	a) Write and explain the drawbacks of assembly language based development.	[5M]	3	1
	b) What is Interrupt? Explain multiple interrupts with examples.	[5M]	3	1
UNIT-IV				
8.	a) What is deadlock? List and explain different conditions favoring a deadlock situation.	[5M]	4	1
	b) Write short notes on Task synchronization.	[5M]	4	1
OR				
9.	a) Explain the concept of Task Scheduling along with example.	[5M]	4	2
	b) Define Non-Preemptive multitasking.	[5M]	4	1

UNIT-V					
10.	a)	Explain the format of Hex records in an Intel Hex file.	[5M]	5	2
	b)	Explain the fundamental issues in hardware software co-design.	[5M]	5	2
OR					
11.		List out different Computational models in embedded design and explain each one in detail.	[10M]	5	2

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