CBCS SCHEME

USN | | | | | | | | | | BCO601

Sixth Semester B.E./B.Tech. Degree Examination, Dec.2025/Jan.2026
Microcontrollers and Embedded Systems

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Differentiate between: i) RISC and CISC ii) Microprocessor and micro controller	10	L2	CO1
	b.	With a neat diagram, explain embedded system hardware.	10	L2	CO1
		OR			
Q.2	a.	Explain in detail about Current Program Status Register (CPSR).	10	L2	CO1
	b.	Define Pipelining. Explain how it helps the program execution.	10	L2	CO1
		Module – 2			
Q.3	a.	Explain about load store instructions in ARM with an example.	10	L2	CO2
	b.	Write a program to find the sum of 10 integer numbers.	10	L3	CO2
		OR			
Q.4	a.	Explain how instruction is scheduled in ARM.	10	L2	CO2
	b.	Write a note on profiling and cycle counting.	10	L1	CO2
		Module – 3			
Q.5	a.	Explain the classification of embedded system.	10	L2	CO3
	b.	Write a note on core of an embedded system in detail.	10	L1	CO3
		OR			
Q.6	a.	Explain the purpose of embedded system used in various domains.	10	L2	CO3
	b.	Explain the following: i) I^2C BUS ii) Watch dog timer	10	L2	CO3
		Module – 4			
Q.7	a.	Explain the characteristics of embedded system.	10	L2	CO4
	b.	Explain the fundamental issues in hardware software design.	10	L2	CO4

		OR			
Q.8	a.	What are the operational and non operational quality attributes of an embedded system.	10	L1	CO4
	b.	With a neat diagram, explain how source file to object file translation takes place in high level language based firmware development.	10	L2	CO4
		Module – 5			
Q.9	a.	With a neat diagram, explain operating system architecture.	10	L2	CO5
	b.	Explain the steps involved in selecting RTOs.	10	L2	CO5
		OR			
Q.10	a.	Write a note on multiprocessing and multitasking.	10	L1	CO5
	b.	Explain the following: i) Simulator, Emulator ii) Boundary scan	10	L2	CO5

* * * * *

CMRIT LIBRARY
BANGALORE - 560 037