

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***UG/PG DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL-MAY 2026****Second Semester****ME- Applied Electronics****PAPT2424 - EMBEDDED SYSTEMS****Regulations - 2024****Duration: 3 Hrs.****Maximum: 100 Marks****PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)**

Q.No	Questions	BLT	CO	Marks
1.	Define embedded system with an example.	L1	1	2
2.	List the use of RT-level components in embedded systems.	L1	1	2
3.	What is VLIW architecture?	L1	2	2
4.	What is meant by watchdog timer?	L1	2	2
5.	Define arbitration in bus systems.	L1	3	2
6.	State any two advantages of wireless protocols like IrDA and Bluetooth.	L1	3	2
7.	Differentiate between FSM and PSM.	L2	4	2
8.	Mention any two uses of real-time systems in embedded applications.	L2	4	2
9.	List any two uses of RTOS.	L1	5	2
10.	What are C extensions for embedded programming?	L1	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

Q.No	Questions	BLT	CO	Marks
11. a	i Explain the optimization techniques used in embedded system design.	L2	1	8
	ii Summarize design methodology using appropriate flow diagrams	L2	1	8
Or				
b	i Explain RT-level sequential components with suitable examples.	L2	1	8
	ii Describe the role of single-purpose processors in system optimization	L2	1	8
12. a	i Compare ASIPs and microcontrollers with examples.	L2	2	8
	ii Write short notes on memory concepts in embedded systems.	L2	2	8
Or				
b	i Explain pipelining and superscalar architectures.	L2	2	8
	ii Explain the use of timers and counters in microcontroller-based systems.	L2	2	8

13.	a	i	Explain the concept and operation of USB protocol in embedded systems.	L2	3	8
		ii	Describe parallel protocols with emphasis on ARM bus.	L2	3	8
Or						
	b	i	Differentiate between I2C and CAN protocols.	L2	3	8
		ii	Explain the importance of I/O addressing in microprocessor interfacing.	L2	3	8
14.	a	i	Explain capturing state machines using sequential programming languages.	L2	4	8
		ii	Discuss synchronization among processes with examples.	L2	4	8
Or						
	b	i	Explain the concept of dataflow model in real-time systems.	L2	4	8
		ii	Describe the role of verification and IP reuse in embedded design	L2	4	8
15.	a	i	Summarize the embedded software compilation process.	L3	5	8
		ii	Explain debugging and emulation techniques used in embedded development.	L3	5	8
Or						
	b	i	Design a real-time task scheduling system using RTOS concepts.	L3	5	10
		ii	Describe how kernel porting and C extensions support embedded development.	L3	5	6
