Course Code: **23EE6E05**

BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE

(AUTONOMOUS)

III - B.Tech II-Semester Regular Examinations (BR23), MAY - 2026

EMBEDDED SYSTEMS (ECE)

Time: 3 hours | Max. Marks: 70

Question Paper consists of Part-A and Part-B
*Answer **ALL** the question in **Part-A and Part-B***

PART–A (10X2 = 20M)

		Marks	CO	BL
1. a)	What is the Purpose of Embedded Systems?	(2M)	CO1	BL2
b)	Discuss Quality attributes of embedded systems.	(2M)	CO1	BL1
c)	Explain any two wireless communication devices used in Embedded Systems.	(2M)	CO2	BL2
d)	Explain the usage of capacitors and inductors in embedded hardware circuit.	(2M)	CO2	BL2
e)	Write the execution steps for embedded firmware.	(2M)	CO3	BL2
f)	Differentiate between C and Embedded C.	(2M)	CO3	BL2
g)	What are the types of RTOS?	(2M)	CO4	BL1
h)	List different Computational models used in an Embedded System design.	(2M)	CO4	BL1
i)	Compare Emulator and Simulator.	(2M)	CO5	BL2
j)	What are laboratory tools?	(2M)	CO5	BL1

PART–B (5X10 = 50M)

2. a.	What is Actuator? Explain its role in Embedded system design? Illustrate with an example.	5(M)	CO1	BL3
b.	Illustrate an application-specific Embedded system with suitable example?	5(M)	CO1	BL2
	(OR)			
3. a.	Draw and explain the typical Embedded system architecture?	5(M)	CO1	BL2
b.	What is the role of embedded system in present life? Discuss major application areas of embedded systems.	5(M)	CO1	BL3
4. a.	Explain the merits and demerits of parallel port over serial interface.	5(M)	CO2	BL3
b.	Explain the role of Watchdog Timer in Embedded system.	5(M)	CO2	BL3
	(OR)			
5. a.	Explain the purpose of (i) Counting Device and (ii) Real Time Clock in an Embedded system.	5(M)	CO2	BL3
b.	Compare the operation of ZigBee and Wi-Fi networks.	5(M)	CO2	BL2
6. a.	Explain in detail about any one Embedded Firmware design approach.	5(M)	CO3	BL3
b.	Explain briefly about Mixing Assembly and high level language.	5(M)	CO3	BL2
	(OR)			
7. a.	What is ISR? Explain Interrupt servicing mechanism.	5(M)	CO3	BL2
b.	Explain structure in the 'Embedded-C' programming context. Explain the significance of structure over normal variables.	5(M)	CO3	BL3

8. a.	Discuss about Multiprocessing and Multitasking techniques used in RTOS?	5(M)	CO4	BL2
b.	Differentiate between the Hardware and Software Co-Design with all the silent features of them.	5(M)	CO4	BL3
	(OR)			
9. a.	Write and explain the basic functions of real time kernel.	5(M)	CO4	BL2
b.	What are the issues to be considered in Hardware software co-design? Explain	5(M)	CO4	BL2
10. a.	State the uses of assembler and deassembler in embedded application development.	5(M)	CO5	BL2
b.	Explain in detail the testing process involved in developing an embedded system.	5(M)	CO5	BL3
	(OR)			
11.a.	With the help of neat sketch explain embedded Software development process.	5(M)	CO5	BL2
b.	Write short notes on the following a) Translation Tools b) Debugging Tools	5(M)	CO5	BL2

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