

CBCS SCHEME

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BETCK205J

Second Semester B.E./B.Tech. Degree Examination, June/July 2025 Introduction to 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 microprocessor and microcontrollers.	05	L2	CO1
	b.	Explain in detail about the purpose of embedded system.	10	L2	CO1
	c.	Explain Brown-out protection circuit with neat diagram.	05	L2	CO1
OR					
Q.2	a.	Explain in detail about the classification of embedded system.	10	L2	CO1
	b.	Describe 7-segment display with neat diagram.	05	L2	CO1
	c.	Write a short notes on Big endian and Little endian processors.	05	L2	CO1
Module – 2					
Q.3	a.	Write a short notes on characteristics of an embedded system.	06	L2	CO2
	b.	Explain in detail about the operational quality attributes.	10	L2	CO2
	c.	Write a short notes on Product Life Cycle.	04	L2	CO2
OR					
Q.4	a.	Describe application specific embedded system with neat diagram.	10	L2	CO2
	b.	Interpret the working of automotive embedded system with neat diagram.	10	L2	CO2
Module – 3					
Q.5	a.	Elaborate on the fundamental issues in hardware-software co-design.	10	L2	CO3
	b.	Discuss the impact of Electronic Design Automation (EDA) tools on modern embedded hardware design.	10	L2	CO3
OR					
Q.6	a.	Explain FSM Model for coin operated telephone with neat diagram.	10	L2	CO3
	b.	Describe binary counter using T-flip-flop with neat diagram.	10	L2	CO3
Module – 4					
Q.7	a.	Explain the Cross Compilation process. Describe the types of files generated and their purpose in embedded firmware development.	10	L2	CO4
	b.	With neat diagram, explain the conversion from assembly language to machine language.	10	L3	CO4

OR

Q.8	a.	Illustrate Incircuit Emulator (ICE) based firmware debugging with neat diagram.	10	L2	CO4
	b.	Discuss in detail the role and importance of embedded system development environment focusing on simulators, emulators and debugging tools.	10	L2	CO4
Module – 5					
Q.9	a.	Explain the operating system architecture with neat diagram.	10	L2	CO5
	b.	With neat diagram explain task scheduling.	10	L2	CO5
OR					
Q.10	a.	Explain the types of kernel with neat diagram.	06	L2	CO5
	b.	Differentiate between process and thread.	06	L2	CO5
	c.	Explain in detail about the multiprocessing and multitasking.	08	L2	CO5
