CBCS SCHEME

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BETCK205J/ BETCKJ205

Second Semester B.E./B.Tech. Degree Examination, June/July 2024
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.	Explain the different external communication interfaces.	8	L3	CO1
	b.	Describe different sensors and actuators used in the embedded system to connect external world.	8	L2	CO1
	c.	Give the differences between embedded systems vs general computing systems.	4	L1	CO1
		OR			
Q.2	a.	Elucidate the purpose of embedded systems.	6	L2	CO1
	b.	Give the differences between Big Endian vs Little Endian processors.	4	L1	CO1
	c.	Explain the various onboard communication interfaces.	10	L3	CO1
		Module – 2			
Q.3	a.	Compare the operational and non-operational quality attributes.	10	L2	CO1
	b.	Demonstrate the application specific embedded system with an example.	10	L2	CO5
		OR			
Q.4	a.	Explain characteristics of an embedded system.	10	L2	CO1
	b.	What is domain specific embedded system and explain with an example.	10	L2	CO5
		Module – 3			
Q.5	a.	Explain the various computational models in embedded system design.	10	L2	CO3
	b.	Highlight the use of VHDL in VLSI design.	10	L2	CO3
		OR			
Q.6	a.	Explain the following digital electronic components: i) Encoder ii) MUX iii) Combinational circuits.	12	L3	CO3
	b.	Unfold the fundamental issues in hardware software Co-Design.	08	L2	CO3

Module – 4					
Q.7	**a.**	Explain different embedded firmware development languages.	**10**	**L2**	**CO4**
	b.	Describe emulators and debuggers in the embedded system development environment.	**10**	**L2**	**CO2**
OR					
Q.8	**a.**	Elucidate different embedded firmware design approaches.	**10**	**L3**	**CO4**
	b.	Explain the different types of files generated on cross compilation.	**10**	**L3**	**CO4**
Module – 5					
Q.9	**a.**	Describe the different types of operating systems.	**10**	**L2**	**CO5**
	b.	Explain the concept of multiprocessing and multitasking.	**6**	**L2**	**CO5**
	c.	Mention the factors to be considered for selection of a scheduling criteria.	**4**	**L2**	**CO5**
OR					
Q.10	**a.**	Analyze the basic concepts of the operating system.	**8**	**L2**	**CO5**
	b.	Describe the different types of thread standards.	**12**	**L2**	**CO5**

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