Sixth/Semester B.E. Degree Examination, Dec.2019/Jan.2020 **Embedded Systems** BANGA

Time: 3 hrs. Max. Marks:100

		Note: Answer any FIVE full questions, selecting	
		at least TWO full questions from each part.	
1		With a past sketch, symbol the symbol dad system life symbol.	
1	a. b.	With a neat sketch, explain the embedded system life cycle. (08 Marl	-
	υ.	Define Embedded system. And also explain the following: i) Watch Dog Timer ii) So Real Time system iii) Hard real time system. (08 Mark	
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	C.	Explain the important steps in developing an embedded system. (04 Mar)	48)
2	a.	Analyze how errors propagate under i) Addition process ii) Multiplication process.	
_	u.	(05 Mar)	ks)
	b.	Define addressing mode with the help of diagram explain index mode data trans-	
		operation. (05 Mar)	
	c.	Write the block diagram of RTN model for a microprocessor datapath and memory interfa	ice
		and briefly explain the steps in instruction cycle with example. (10 Mar)	ks)
3	a.	List and explain the various types of memories. (06 Mar)	
	b.	Draw and explain the internal structure of SRAM. Also write the timing diagram for re	
		and write operation. (08 Mar)	-
	c.	Explain the following: i) Swapping ii) Overlays. (06 Mar)	ks)
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4	a.	Briefly explain the common life cycle models of an embedded system with a suital	
	1.	diagram for each. (10 Mar)	
	b.	Develop hardware and software specification for designing a counter and give data cont	
		flow diagram. (10 Mar.	ks)
		PART – B	
5	a.	Explain how memory is managed at i) System level ii) Process level. (10 Mar.	Izo)
J	b.	Write short notes on foreground/back ground systems. (05 Mar.	
	c.	Differentiate between single thread and multi thread process. (05 Mar.)	
	diam.	(03 Mail	11.5)
6	a.	Explain in detail about TCB (Task Control Block) and its functions. (07 Mar.	ks)
	b.	Explain three kinds of stack. (06 Mar.	
	c.	Discuss the significance of duplicate hardware content with suitable diagram. (07 Mar.	
7	a.	Explain Andahl's law. Consider a system with following characteristics. The task to	be
		analyzed and improved currently executes in 100 time units, the goal is to reduce execution	
		time to 50 units, the algorithm to be improved uses 40 time units. Determine the unknown	wn
		parameter and write the inference. (08 Mar	ks)

- parameter and write the inference.
 - Write 'C' functions to determine the SUM of the elements in an array and analyze it line by (06 Marks) (06 Marks)
 - Explain 3 methods used to compute time loading.

- 8 a. Write a short notes on the following:
 - i) Hardware accelerators
 - ii) Tricks of the trades.

(10 Marks)

- b. Analyze the basic flow of control construct in
 - i) Constant time statements
 - ii) Looping constructs
 - iii) Conditional statements
 - iv) Sequence of statements
 - v) Function calls.

(10 Marks)