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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination –MAY 2019

Course: B. Tech in Computer Engineering **Sem: III**

Subject Name: Digital Electronics and Microprocessor

Subject Code: (BTCOC305)

Max Marks: 60 **Date:01/06/2019** **Duration: 3 Hr.**

Instructions to the Students:

1. *Solve **ANY FIVE** questions out of the following.*
2. *The level question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.*
3. *Use of non-programmable scientific calculators is allowed.*
4. *Assume suitable data wherever necessary and mention it clearly.*

			(Level/CO)	Marks
Q. 1	A)	State and Explain De Morgan's theorem.		04
	B)	Conversion of Number System. i) Convert 1792.12 decimal to binary ii) Convert 338.025 decimal to octal		04
	C)	Using the rules of Boolean Algebra Simplify the following i) $BC + A\bar{C} + AB + BCD = BC + A\bar{C}$ ii) $XY + XYZ + XY\bar{Z} + \bar{X}YZ$		04
Q.2		**Solve Any Two of the following.**		
	A)	Implement single digit BCD adder using 4-bit binary adder IC7483. Show the design procedure & explain its operation.		06
	B)	Write short note on. i) Full subtractor ii) Parity Generator		06
	C)	Design 2 bit digital comparator using suitable logic gates.		06
Q. 3	A)	Compare Combinational circuit and Sequential circuit.		03
	B)	What is Flip flop? Explain clocked SR flip flop.		04
	C)	What is shift register? State and explain any two types of shift register.		05
Q.4	A)	Draw and explain block diagram of 8086 microprocessor.		06
	B)	What is memory segmentation of 8086 microprocessor ? What is the need of memory segmentation in 8086 microprocessor?		06

Q. 5 **Solve Any Two of the following.**

A) Draw and explain block diagram of 8257 DMA controller. **06**

B) What is the interrupt vector table? Draw and explain the interrupt vector table for 8086 microprocessor. **06**

C) Why 8086 memory is divided into banks? How are even and odd addressed bytes accessed in 8086 memory address space? **06**

Q. 6 **A)** State and explain with examples addressing modes of 8086 microprocessor. **06**

B) What is assembly language? Explain assembler, compiler and interpreter. **06**

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