DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Regular & Supplementary Summer 2024

Course: B. Tech. **Branch : Computer and Allied** **Semester :IV**

Subject Code & Name: BTES405 Digital Logic Design & Microprocessor

Max Marks: 60 **Date: 24/06/2024** **Duration: 3 Hr.**

Instructions to the Students:

1. *All the questions are compulsory.*
2. *The level of 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	**Solve Any Two of the following.**		**12**
A)	**Write Characteristics of Digital Signals.**	**Analyzing**	
B)	**Explain the working of Digital Gate with their types.**	**Understanding**	
C)	**State and prove any two theorem of Boolean algebra..**	**Applying**	
Q.2	**Solve Any Two of the following.**		**12**
A)	**Explain the working of Multiplexer and De-Multiplexer.**	**Understanding**	
B)	**Design a half-adder and full-adder circuits using k-map**	**Applying**	
C)	**Minimize the four-variable logic function using k-map.** **f(A,B,C,D) = ∑m(0, 1, 2, 3, 5, 7, 8, 9, 11, 14)**	**Applying**	
Q. 3	**Solve Any Two of the following.**		**12**
A)	**Design 3-bit synchronous up counter using JK flip flops**	**Applying**	
B)	**Drew and explain serial in serial out shift register in detail.**	**Applying**	
C)	**Write and explain any two applications of flip-flop.**	**Understanding**	
Q.4	**Solve Any Two of the following.**		**12**
A)	**Comparison of 8-bit, 16-bit, and 32-bit microprocessors.**	**Understanding**	
B)	**Draw the pin diagram of 8086 and explain in brief.**	**Understanding**	
C)	**Write short note on Memory.**	**Understanding**	
Q. 5	**Solve Any Two of the following.**		**12**
A)	**Explain different type of Addressing modes of 8086.**	**Analyzing**	
B)	**Write short note on assembler and compiler.**	**Analyzing**	
C)	**Explain classification of instruction set.**	**Understanding**	

***** End *****

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B)	**Explain the working of Digital Gate with their types.**	**Understanding**	
C)	**State and prove any two theorem of Boolean algebra..**	**Applying**	
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A)	**Explain the working of Multiplexer and De-Multiplexer.**	**Understanding**	
B)	**Design a half-adder and full-adder circuits using k-map**	**Applying**	
C)	**Minimize the four-variable logic function using k-map.** **f(A,B,C,D) = ∑m(0, 1, 2, 3, 5, 7, 8, 9, 11, 14)**	**Applying**	
Q. 3	**Solve Any Two of the following.**		**12**
A)	**Design 3-bit synchronous up counter using JK flip flops**	**Applying**	
B)	**Drew and explain serial in serial out shift register in detail.**	**Applying**	
C)	**Write and explain any two applications of flip-flop.**	**Understanding**	
Q.4	**Solve Any Two of the following.**		**12**
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C)	**Write short note on Memory.**	**Understanding**	
Q. 5	**Solve Any Two of the following.**		**12**
A)	**Explain different type of Addressing modes of 8086.**	**Analyzing**	
B)	**Write short note on assembler and compiler.**	**Analyzing**	
C)	**Explain classification of instruction set.**	**Understanding**	

***** End *****

	DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE **Winter Examination – 2022** **Course: B. Tech. Branch : Computr Engg/ CSE** **Semester :IV** **Subject Code & Name: BTES405 Digital Logic Design & Microprocessor** **Max Marks: 60 Date: Duration: 3 Hr.**		
	Instructions to the Students: *1. All the questions are compulsory.* *2. The level of 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	**Solve Any Two of the following.**		**12**
A)	**Differentiate between analog vs digital signal.**	**Analyzing**	**6**
B)	**Which gates are known as universal gates? Justify using examples.**	**Understanding**	**6**
C)	**State and prove any two theorems of Boolean algebra.**	**Applying**	**6**
Q.2	**Solve Any Two of the following.**		**12**
A)	**How will you implement Full adder circuit? Draw the circuit diagram and derive equation for sum and carry.**	**Understanding**	**6**
B)	**Using K map, simplify Boolean equation for the following logic equation expressed by min terms? Y=F(A,B,C,D)=∑m(7,9, 10, 11, 12, 13, 14, 15)**	**Applying**	**6**
C)	**Differentiate between combinational and sequential logic circuit.**	**Analyzing**	**6**
Q. 3	**Solve Any Two of the following.**		**12**
A)	**Differentiate between synchronous and asynchronous counter.**	**Analyzing**	**6**
B)	**Explain SR Flip flop in detail.**	**Understanding**	**6**
C)	**Draw and explain serial in serial out shift register in detal.**	**Understanding**	**6**
Q.4	**Solve Any Two of the following.**		**12**
A)	**Diffrentiate in between 8085 & 8086 microprocessors.**	**Analyzing**	**6**
B)	**Draw & explain architecture of DMA controller.**	**Understanding**	**6**
C)	**Draw & explain 8086 block diagram.**	**Understanding**	**6**
Q. 5	**Solve Any Two of the following.**		**12**
A)	**Classify different instruction set of 8086.**	**Analyzing**	**6**

B)	**Explain different addressing modes of 8086.**	**Understanding**	**6**
C)	**Explain assembly language programming tools.**	**Understanding**	**6**
	***** End *****		

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Regular End Semester Examination – Summer 2022

Course: B. Tech. **Branch : COMPUTER ENGG/CSE** **Semester :IV**

Subject Code & Name: BTES405 Digital Logic Design & Microprocessor

Max Marks: 60 **Date: 27/08/2022** **Duration: 3.45 Hr.**

Instructions to the Students:

1. *All the questions are compulsory.*
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4. *Assume suitable data wherever necessary and mention it clearly.*

		(Level/CO)	Marks
Q. 1	Solve Any Two of the following.		12
A)	What is Signal? Write Characteristics of Digital Signals.	Analyzing	
B)	Explain Digital Gate with their types.	Understanding	
C)	Write short note on Error Detecting and Correcting Codes.	Applying	
Q.2	Solve Any Two of the following.		12
A)	Explain the working of Multiplexer and De-Multiplexer.	Understanding	
B)	Write and explain with example Don't care conditions.	Applying	
C)	Minimize the four-variable logic function using k-map. $f(A,B,C,D) = \sum m(0, 1, 2, 3, 5, 7, 8, 9, 11, 14)$	Applying	
Q. 3	Solve Any Two of the following.		12
A)	Design 3-bit synchronous up counter using JK flip flops	Applying	
B)	Convert S-R FLIP-FLOP TO J-K FLIP-FLOP.	Applying	
C)	Write and explain any two applications of flip-flop.	Understanding	
Q.4	Solve Any Two of the following.		12
A)	Comparison of 8-bit, (8085) 16-bit (8086), and 32-bit microprocessors (80386)	Understanding	
B)	Draw and explain 8086 Internal Block Diagram.	Understanding	
C)	Write short note on Memory .	Understanding	
Q. 5	Solve Any Two of the following.		12
A)	Explain different type of Addressing modes of 8086.	Analyzing	
B)	Write different Data transfer instructions.	Analyzing	
C)	Write short note on Assemblers and compilers	Understanding	

*** End ***