DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
Winter Examination – 2022

Course: B. Tech.   Branch : Electronics and Computer Engineering   Semester : III

Subject Code & Name: BTESC305 & Digital Electronics and Microprocessor

Max Marks: 60M   Date: 17/03/2023   Duration: 03:00 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.**		**12M**
A)	Perform following Conversion. a. $(11100111)_2 = (?)_{gray}$ b. $(1792.12)_{10} = (?)_2$ c. $(338.025)_{10} = (?)_8$	BL2 & CO1	6
B)	Explain the working of following gates with their truth table and logic diagram. a) AND b) NOR c)EX-OR	BL2 & CO1	6
C)	Write a short note on multiplexer and demultiplexer.	BL2 & CO1	6
Q.2	**Solve Any Two of the following.**		**12M**
A)	Minimize the following equation using K-map. a. $Y = \Sigma\, m(0,2,4,7,8,9,11,12,13)$ b. $Y = \Pi\, M(0,1,2,3,5,7)$	BL3& CO2	6
B)	Explain the working of full substractor with truth table. Implement it with half substractor.	BL2& CO2	6
C)	Design 2 bit digital comparator using logic gates.	BL3& CO2	6
Q. 3	**Solve Any Two of the following.**		**12M**
A)	Explain S-R flip flop with logic diagram and truth table.	BL3& CO3	6
B)	What is counter? Explain 4-bit ring counter using D-flip flop. Implement its truth table.	BL2& CO3	6
C)	Write a short note on shift register and list down its application.	BL3& CO3	6
Q.4	**Solve Any Two of the following.**		**12M**
A)	Draw and explain block diagram of 8086 microprocessor and explain in detail.	BL1& CO4	6
B)	Explain the addressing modes of 8086 with suitable example.	BL2& CO4	6
C)	Explain the structure of 8086 PSW	BL3& CO4	6

Q. 5 Solve Any Two of the following.   **12M**

A) Explain with example arithmetic group of instruction set in 8085.   BL3& CO5   6

B) Compare 8085 with 8086.   BL3& CO5   6

C) Write a program addition of two 16 bit number using 8085   BL3& CO5   6

*** End ***