

Maharashtra Institute of Technology, Aurangabad

(An Autonomous Institute)

END SEMESTER EXAMINATION

Second Year B.Tech (CSE) – Feb/Mar-2023

Course Code : CSE203

Course Name : Digital Electronics and Microprocessor

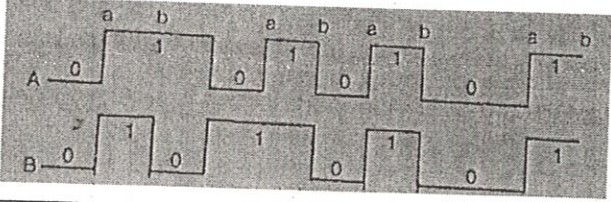
Duration : 2 Hrs

Max. Marks : 50

Date : 08 FEB 2023

Instructions :

- All questions are compulsory
- Assume suitable data wherever necessary and clearly state it
- Figures to right indicate full marks

Q.1 Answer any five(Marks:10)		Marks	CO	BL	PI
a)	Define what are basic logic gates and what are universal logic gates?	2	1	1	1.3.1
b)	Compute two's complement of the number 01100111	2	2	3	1.3.1
c)	Convert the following expression into standard SOP form $Y = AB + AC\bar{C}$	2	3	2	1.3.1
d)	Draw and explain sequential circuit?	2	3	2	1.3.1
e)	List any four main difference between microprocessor 8085 and 8086	2	4	1	1.3.1
f)	Give the list of flags in 8086.	2	4	2	1.3.1
g)	Define Addressing mode?	2	5	1	1.3.1
h)	Draw and explain I/O mode format of PPI 8255	2	6	2	1.3.1
Q.2	The input to a 2-input OR gate are pulses A and B of figure given below. Sketch the output pulse. Feed this output pulse as input to not gate and sketch the output of NOT gate. 	8	1	3	1.3.1
Q.2	Explain commutative, associative, distributive laws and Duality theorem applied to Boolean algebra	8	1	2	1.3.1
Q.3	Convert the following binary number 111000.0101 to a) Decimal b) Octal c) Hexadecimal D) Gray	8	2	2	1.3.1

	OR				
Q.3	Elaborate what is meant by data select lines in multiplexer and demultiplexer? Discuss their role in data selection with example.	8	3	2	1.3.1
Q.4	Simplify the logic function $Y = \sum m(1,5,6,7,11,12,13,15)$ Use Karnaugh map. Draw logic circuit for the simplified function	8	3	3	1.3.1
	OR				
Q.4	a) Explain the functions of the ALE signal and accumulator of the 8085 microprocessor b) Describe memory segmentation. How it is done in 8086 microprocessor	4 4	4 4	2 2	1.3.1
Q.5	a) Calculate physical address when CS = 4370H , IP = 561E H b) Determine the content of register AL and the state of the flags. After the following instructions are executed. MOV AL,AB MOV BL,CD AND AL,BL	4 4	4 5	3 3	1.3.1
	OR				
Q.5	Two 16- bit numbers are stored at Data1 and Data2 respectively. Prepare an instruction sequence to Add, Subtract, AND these numbers and store it in Ans1,Ans2,Ans3 respectively.	8	5	3	1.3.1
Q.6	A memory module of 16KB size is to be interfaced to 8086 microprocessor such that the memory address begins at 00000H. Use 4KB RAM chip. Specify i) Address decoding table ii) Chip select logic using 74LS138 decoder iii) Neat interfacing diagram	8	6	3	1.3.1
	OR				
Q.6	Explain the following assembler directive in 8086 i. ASSUME ii. EQU iii. DW iv. DD	8	5	2	1.3.1

Note:- All course outcomes shall be addressed.