

Maharashtra Institute of Technology, Aurangabad

(An Autonomous Institute)

END SEMESTER EXAMINATION

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

Course Code : AID204

Course Name : Microprocessors and Microcontrollers

Duration : 2 Hrs

Max. Marks : 50

Date :

Instructions :

10 FEB 2023

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

Q. 1	Solve any five following questions (Marks:10)	Marks	CO	BL	PI
a)	Define Boolean Algebra and draw block diagram of logic gate.	2	1	1	1.3.1
b)	Draw Full subtractor using Half Subtractor	2	2	1	1.3.1
c)	Explain Instruction MOV [1000],AL	2	3	1	1.3.1
d)	Give Example of Arithmetic instructions	2	4	1	1.3.1
e)	What is EEPROM	2	5	1	1.3.1
f)	What is LM35, give steps to fetch data.	2	6	2	1.3.1
g)	How much is data memory of 8051	2	6	1	1.3.1
h)	What are the addressing modes of 8051	2	6	1	1.3.1
Q. 2	Solve any two following questions (Marks:08)				
a)	Write truth table for three input Ex-OR gate with its applications	4	1	2	2.1.3
b)	Prove Associative laws using Truth table	4	1	2	2.1.3
c)	Reduce the following expression using Boolean algebra, implement the simplified form using NAND Gates $Y=AB+\overline{AC}+A\overline{B}C(AB+C)$	4	1	2	2.1.3
Q. 3	Solve any two following questions (Marks:08)				
a)	Simplify the following three variable logic expression $Y= \prod M(1,3,5)$	4	2	2	2.1.3
b)	List out types of Flip-flops and explain SR Flip flop.	4	2	1	1.3.1
c)	Minimize following logic function using K-maps and realize using the basic gate $F(A,B,C,D)=\sum m(0,1,2,3,7,8,9,10,11,12,13)$	4	2	2	2.1.3

Q. 4	Solve any two following questions (Marks:08)				
a)	State the features of microprocessor 8086.	4	3	1	1.3.1
b)	List out addressing mode of 8086	4	3	1	1.3.1
c)	Draw pin diagram for 8086	4	3	1	1.3.1
Q. 5	Solve any two following questions (Marks:08)				
a)	State the Operating Modes of 8086 with brief information about pins.	4	4	1	1.3.1
b)	Explain in brief Push and Pop Instruction	4	4	1	1.3.1
c)	Write program for 8 bit Addition in 8086	4	4	3	2.1.3
Q. 6	Solve any two following questions (Marks:08)				
a)	Write difference between microprocessor and microcontroller	4	5	1	1.3.1
b)	Give generalize structure of internal RAM of 8051	4	5	1	1.3.1
c)	Draw interfacing diagram of 8 LED to 8051	4	6	3	2.1.3

Note:- All course outcomes shall be addressed.