Code No. : 13252 S N

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD
Accredited by NAAC with A++ Grade
B.E. III-Semester Supplementary Examinations, August-2023
Microprocessors, Microcontrollers & Interfacing
(Common to CSE & AIML)

Time: **3 hours**

Max. Marks: **60**

Note: Answer all questions from Part-A and any FIVE from Part-B

Part-A (10× 2 = 20 Marks)

Q. No.	Stem of the question	M	L	CO	PO
1.	What is the role of CS:IR register pair in 8086 microprocessor?	2	2	1	1,2
2.	What will be the value in AX after executing the instruction XOR AX, AX.	2	1	1	1,2
3.	Explain REPE MOVSB instruction.	2	2	2	1,2
4.	Give a set of assembler directives that are used for defining macro and procedure.	2	1	2	1,2
5.	Give the control word format of 8255.	2	1	3	1,2
6.	Which control lines of LCD display are used to interface it with a microprocessor?	2	1	3	1,2
7.	Differentiate between a microprocessor and a microcontroller.	2	2	4	1,2
8.	Give a list of addressing modes supported by 8051 microcontroller.	2	1	4	1,2
9.	Give applications of sensors.	2	1	5	1,2
10.	Explain in brief about stepper motor.	2	2	5	1,2

Part-B (5×8 = 40 Marks)

Q. No.	Stem of the question	M	L	CO	PO
11. a)	With the help of a neat diagram, explain the architecture of 8086 microprocessor.	4	2	1	1,2
b)	What is addressing mode? With the help of instructions, explain the register and immediate addressing modes of 8086 microprocessor.	4	2	1	1,2
12. a)	Implement 'while' control structure of high level programming language using 8086 instructions.	4	3	2	1,2,3
b)	What is the role of Interrupt Vector Table (IVT) when an external device interrupts a microprocessor? Give a sequence of steps that takes place to service the request by the device.	4	3	2	1,2,3

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		M	L	CO	PO
13. a)	Draw the block diagram of 8255 programmable peripheral interfacing chip. Write the remaining entries in the following table. ----------------------- A1 A0 Selection ----------------------- 0 0 Port A 0 1 1 0 1 1 -----------------------	4	1	3	1,2
b)	What is DMA? Write the sequence of steps that takes place in a 8086 based system to transfer the data between memory and IO device using DMA.	4	3	3	1,2,3
14. a)	With the help of neat diagram, explain the architecture of 8051 microcontroller.	4	2	4	1,2
b)	Give the details of bit addressable memory in 805.	4	3	4	1,2,3
15. a)	Draw a neat diagram to interface a stepper motor to 8051 microcontroller and explain it.	4	3	5	1,2,3
b)	Write an assembly language program to rotate the stepper motor clock wise.	4	3	5	1,2,3
16. a)	Write an assembly language program to find the largest element in a given set of 8-bit numbers.	4	3	1	1,2,3
b)	Write a procedure for finding factorial of a given number.	4	3	2	1,2,3
17.	Answer any *two* of the following:				
a)	Draw and explain the block diagram of 8259.	4	2	3	1,2
b)	Explain the addressing modes of 8051 microcontroller.	4	2	4	1,2
c)	Describe a typical home protection system.	4	2	5	1,2

M : Marks;   L: Bloom's Taxonomy Level;   CO; Course Outcome;   PO: Programme Outcome

i)	Blooms Taxonomy Level – 1	20%
ii)	Blooms Taxonomy Level – 2	40%
iii)	Blooms Taxonomy Level – 3 & 4	40%

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