Hall Ticket Number:

Code No. : 16435

VASAVI COLLEGE OF ENGINEERING *(AUTONOMOUS)*, HYDERABAD

Accredited by NAAC with A++ Grade

B.E. (E.C.E.) VI-Semester Main & Backlog Examinations, June-2022

Microprocessors and Microcontrollers

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 operation of the pins a) MN/MX' and b) BHE'/A_0 Pins of 8086μp?	2	1	1	1
2.	List the functions of Bus Interface Unit in 8086 μp?	2	1	1	1
3.	Determine the number of memory chips required to design a 64KX8 memory with 8KX8 chips?	2	2	2	2
4.	Configure CWR of 8253 to generate a square wave using Counter-0 block when interfaced with 8086 μp?	2	3	2	1
5.	With a neat diagram show the Internal RAM and ROM Organization of 8051 μc?	2	2	3	1
6.	Write any two examples for branching instructions of 8051 μc with a suitable example?	2	1	3	1
7.	Define Interrupt? Write the Interrupt address of interrupts available in 8051 μc?	2	1	4	1
8.	Configure TMOD register of 8051 μc to program Timer1 in mode-2 and What is the necessity of an On chip Timer in 8051 μc?	2	3	4	2
9.	Differentiate between the execution of the following instructions of 8051 μc? a) MOVC b) MOVX c) MOV	2	2	5	1
10.	How does a key-denounce occur while interfacing a keypad with 8051 μc? Suggest suitable method to avoid key-debounce?	2	2	5	2
	Part-B (5 × 8 = 40 Marks)				
11. a)	Illustrate the process of converting logical address of 8086 μp into physical address with a suitable example?	3	2	1	1
b)	Explain the minimum mode READ and WRITE operation of 8086 μp with a neat timing diagram?	5	2	1	1

Contd... 2

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12. a)	Interface DMA controller with 8086 µp? Justify the necessity of Interfacing DMA with 8086 µp?	4	4	2	2
b)	Explain the process of Interfacing 8255 PPI with 8086µp in I/O mapped I/O mode?	4	2	2	1
13. a)	List the addressing modes of the 8051µc and explain each addressing mode with an example?	3	1	3	1
b)	Draw the pin diagram of 8051 µc and explain the functionality of each pin?	5	1	3	1
14. a)	Interface DAC0800 with 8051 µc and Write the program to generate square waveform?	4	3	4	2
b)	Illustrate the process of interfacing ADC (Analog to Digital Converter) with 8051 µc?	4	3	4	2
15. a)	Write the Embedded C program to display the word "ECEDEPT" on LCD display, when it is interfaced with 8051 µc?	4	3	5	2
b)	Write the Embedded C program to control the speed of a DC motor, when it is interfaced with 8051 µc?	4	3	5	2
16. a)	Represent the format of PSW of 8086 µp and write the operation of the conditional flag bits and control flag bits?	4	2	1	1
b)	Design an Interface of Two 4Kx8 EPROM chips and Two 4Kx8 SRAM chips with 8086 µp? NOTE: The ROM Space should include the reset address of 8086 µp.	4	3	2	2
17.	Answer any ***two*** of the following:				
a)	Explain the following instructions of the 8051 µc? i) CJNE ii) SWAP A iii) INC @R0 iv) DJNZ	4	2	3	1
b)	Write a program to transfer the data "External Exam" serially with a baud rate of 9600? (Assume Xtal freq=11.0592Mhz)	4	2	4	2
c)	Explain with a suitable example how 8051 µc based system can be used for developing a Home Automation application?	4	3	5	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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