

Hall Ticket Number:

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Code No. : 16448 O

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD*Accredited by NAAC with A++ Grade***B.E. (E.C.E.) VI-Semester Backlog Examinations, May/June-2023****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.	Differentiate between Minimum and Maximum mode Operations of 8086 μ p?	2	3	1	1
2.	Interpret the read cycle timing diagram of 8086 μ p in minimum mode?	2	3	1	2
3.	Justify the necessity of interfacing 8253 timer with 8086 μ p?	2	2	2	2
4.	Configure 8255 PPI, PORT A as i/p port, PORT B as o/p port, PORT C as o/p Port, Group A in mode0 and Group B in mode1?	2	3	2	2
5.	List any four architectural features of 8051 μ c?	2	1	3	3
6.	What is the significance of PORT3 of 8051 μ c?	2	2	3	3
7.	Write the configuration of IE register of 8051?	2	2	4	2
8.	Justify the importance of TI and RI flags of SCON register in serial transmission?	2	3	4	2
9.	What is the significance of speed control of DC motor with the technique of PWM?	2	3	5	1
10.	Draw the interface diagram to interface 7-segment display with 8051 μ c?	2	1	5	2
Part-B (5 × 8 = 40 Marks)					
11. a)	Analyze memory segmentation in of 8086 μ p and list the pros and cons of memory segmentation?	4	3	1	1
b)	Explain the role of stack in executing the interrupts?	4	1	1	1
12. a)	Interface two chips of 8KX8 EPROM and two chips of 8KX8 SRAM with 8086 μ p? Assume suitable conditions for mapping the address?	4	3	2	2
b)	Explain the operation of 8257 DMA controller with a neat diagram?	4	1	2	2
13. a)	Write a program to arrange the elements of an array in ascending order whose size is 5 elements for 8051 μ c ?	4	2	3	4
b)	Define addressing mode? Explain the addressing modes of 8051 μ c with a suitable example?	4	1	3	2

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14. a)	Write a program to generate a square wave of 1Khz using Timer1 in mode1 of 8051 μ c? Assume xtal freq=11.0592Mhz?	4	3	4	4
b)	Write a program to transfer the string "VASAVI" over the serial port of 8051 μ c at a baud rate of 9600? Assume xtal freq=11.0592Mhz?	4	4	4	4
15. a)	Write a program to interface stepper motor with 8051 μ c to rotate the motor in clockwise and Anticlockwise direction?	4	2	5	3
b)	Explain the process of Home automation based Case study with 8051 μ c?	4	3	5	5
16. a)	Explain the process of Latching of 20-bit address bus of 8086 μ p?	4	2	1	1
b)	Explain the architecture of 8255 PPI with a neat diagram?	4	2	2	2
17.	Answer any <i>two</i> of the following:				
a)	Write a program to transfer a block of data from 40h memory location to 60h memory location in reverse order for 8051 μ c? Assume the block size as 5 elements?	4	3	3	3
b)	Interface DAC with 8051 μ c and write a program to generate a triangular wave?	4	3	4	4
c)	Write a program to interface 2X16 LCD with 8051 μ c?	4	2	5	1

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

i)	Blooms Taxonomy Level – 1	20%
ii)	Blooms Taxonomy Level – 2	30%
iii)	Blooms Taxonomy Level – 3 & 4	50%
