Hall Ticket Number:

Code No. : 15659 N/O

VASAVI COLLEGE OF ENGINEERING *(AUTONOMOUS)*, HYDERABAD

Accredited by NAAC with A++ Grade

B.E. (I.T.) V-Semester Main & Backlog Examinations, Jan./Feb.-2024

Microprocessor and Interfacing

Time: **3 hours** Max. Marks: **60**

*Note: Answer all 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.	Distinguish between the microprocessor and microcontroller?	2	2	1	1
2.	Find the number of T-states for the given instruction MVI A, 30?	2	1	1	1
3.	Write an ALP for 8086 processor to find the bigger of two numbers.	2	1	2	1
4.	Compare maskable and non maskable interrupts of 8086 processor	2	2	2	1
5.	Draw the 8255 I/O command word.	2	1	3	1
6.	State the purpose of ADC.	2	1	3	1
7.	Identify the important features of 8253 interfacing device.	2	1	4	1
8.	Draw the flow graph for loading command words in to 8259.	2	1	4	1
9.	Write the signal functions of the following pins of 8251. i) TXRDY ii) TXEMPTY	2	1	5	1
10.	Define the functions of 80186 advanced microprocessor.	2	1	5	1
	Part-B (5 × 8 = 40 Marks)				
11. a)	Draw the block diagram and explain the pin functions of 8085 microprocessor.	5	2	1	1
b)	Write an assembly language program to find the sum of N numbers using 8085 microprocessor.	3	3	1	2
12. a)	Explain the register structure of 8086 microprocessor.	5	2	2	1
b)	How do you multiply a data byte located at offset 0500H in 2000H segment to another data byte available at 0600H in the same segment and store the result at 0700H in the same segment. Write an assembly language using 8086 microprocessors.	3	3	2	2
13. a)	Discuss the 8279 interfacing device with a neat diagram.	5	2	3	1
b)	How the stepper motor is interfaced with the 8086 microprocessors? And Write an assembly language program to run stepper motor continuously clock wise direction.	3	3	3	2
14. a)	List and explain the modes of 8253 programmable interval timer.	5	2	4	1

Contd... 2

b)	Design an interfacing circuit to interface 3 , 8259's to 8086 processor	3	3	4	2
15. a)	Demonstrate the functional blocks of (Programmable Communication Interface) 8251 with neat diagram.	5	3	5	2
b)	Draw and explain the command word of 8251 (PCI).	3	3	5	2
16. a)	List and explain the 8085 microprocessor stacks and subroutine instructions with suitable examples.	4	3	1	2
b)	Suppose AL=ACH. Find the value of AL in each of the following case if the carry flag is set. i.) ROL AL,2 ii.) RCL AL.2	4	3	2	2
17.	Answer any ***two*** of the following:				
a)	Design an Interfacing circuit for interfacing 64Kbytes of RAM and 64Kbytes of ROM to 8086 processor and draw relevant Address map	4	3	3	2
b)	List and explain the functional blocks of 8259 interfacing device.	4	2	4	1
c)	Illustrate the DMA Controller with neat diagram.	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	40%
iii)	Blooms Taxonomy Level – 3 & 4	40%

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