Hall Ticket Number:

Code No. : 16315

VASAVI COLLEGE OF ENGINEERING *(Autonomous)*, HYDERABAD
B.E. (E.E.E. : CBCS) VI-Semester Main Examinations, January-2021
Microprocessors and Microcontrollers Applications

Time: **2** hours   Max. Marks: **60**

Note: Answer any NINE questions from Part-A and any THREE from Part-B

Part-A *(9× 2 = 18 Marks)*

Q. No.	Stem of the question	M	L	CO	PO
1.	Write any two addressing modes of 8086 with an example?	2	1	1	1
2.	Give example for any two conditional branch instructions of 8086.	2	1	2	1
3.	If the data segment contains 4000H, and offset is 104BH, what is physical address?	2	2	1	1
4.	Explain the following instructions a)XLAT b)DAA	2	2	2	1
5.	Illustrate different modes of operation of 8255?	2	3	3	1
6.	Define Maskable and non-maskable interrupts.	2	1	2	1
7.	Give the format of SBUF Special Function Register of 8051.	2	1	4	1
8.	Write about the Port3 of 8051.	2	1	4	1
9.	Define baud rate in serial communication. How is it different from bit rate?	2	1	4	1
10.	Give any four applications of microcontrollers.	2	1	4	1
11.	Write the advantage of segmented memory of 8086.	2	1	1	1
12.	Specify the functionality of BIU in accessing a data required by EU in 8086 processor.	2	2	1	1
Part-B *(3 × 14 = 42 Marks)*					
13. a)	Explain the architecture of 8086 microprocessor with neat diagram.	12	2	1	1
b)	What are the pins associated with Minimum Mode configured 8086 Microprocessor?	2	2	1	1
14. a)	Write an assembly language program for 8086 to find average of 'n' 16 bit numbers.	9	4	2	2
b)	Explain the following pin functions of 8086 processor i) INTR ii) HOLD iii) ORG iv) ENDS v) LOCK	5	2	2	1
15. a)	Draw the schematic of interfacing an 8-bit ADC to 8086 processor. Write an Assembly Language Program to read the digital value from ADC.	12	4	3	2
b)	"Interrupt mode of data transfer is efficient than programmed mode of data transfer". Illustrate the statement.	2	2	3	1

			M	L	CO	PO
16.	a)	Explain the architecture of 8051 microcontroller with neat diagram.	10	2	4	1
	b)	Discuss how external memory is connected to 8051 controller.	4	2	4	1
17.	a)	Write an Assembly Language program for 8051 to generate a 10ms delay using Timer0.(Assume XTAL frequency=12MHz)	12	4	4	2
	b)	Draw the formats of Special Function Register of SMOD, TMOD.	2	2	4	1
18.	a)	Distinguish between Procedures and Macros.	7	2	1	1
	b)	Explain string manipulation instructions with examples.	7	2	2	1
19.		Answer any *two* of the following:				
	a)	Explain the concept of register banks in 8051.	7	2	4	1
	b)	Illustrate the function of each bit in control word register of 8255.	7	3	3	1
	c)	Assume that register A has packed BCD, write an 8051 ALP convert packed BCD to two ASCII numbers and place them in R2 and R6.	7	4	4	2

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

S. No.	Criteria for questions	Percentage
1	Fundamental knowledge (Level-1 & 2)	62
2	Knowledge on application and analysis (Level-3 & 4)	38
3	*Critical thinking and ability to design (Level-5 & 6) (*wherever applicable)	0

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