Reg. No.:

Name :

VIT

Vellore Institute of Technology

(Deemed to be University under section 3 of UGC Act, 1956)

Continuous Assessment Test I – September 2023

Programme	:	**B.Tech (BCE/BPS/BAI/BRS)**	Semester	:	**FS 2023-24**
			Code	:	BECE204L
Course	:	Microprocessors and Microcontrollers	Class Nbr	:	**CH2023240101166 CH2023240101169 CH2023240101178 CH2023240100941 CH2023240100943 CH2023240100947 CH2023240100951 CH2023240100954 CH2023240100959 CH2023240100963**
Faculty	:	**REVATHI S, SUBHASHINI N, MUTHULAKSHMI S, MANOJ KUMAR R, BALA MURUGAN M S, SOURABH PAUL, S SELVENDRAN, LAKSHMI PRIYA, AUGUSTA SOPHY BEULET P, SIVASUBRAMANIAN A**	Slot	:	**E1+TE1**
Time	:	**90 Minutes**	Max. Marks	:	**50**

Answer ALL the questions

Note: All the programs should have the comments which describes the logic of the program

Q.No.	Sub. Sec.	Questions	Marks
1.		Compare 8085 processor with 8086 processor.	5
2.		The various registers in 8086 microprocessor contain the value as given in Table 1.	

Table 1

CS : 2000H	DS: 3000H	ES: 3500H	SS: 2500H
DI: 4000H	BP: 4C50H	BX:34FE	IP:2345H
SI: 1000H	SP: 1550H	DX: 13F2H	

Fill column 3 and column 4 of Table 2 for the instruction given in column 2 of Table 2. (Note: Detailed calculation of physical address is expected in answer sheet, final answer to be written in column 4). **10**

Table 2

S. No	Instruction	Addressing Mode	Physical Address

1.	CLC		
2.	MUL [DX]		
3.	MOV AL, [BX+80H]		
4.	MOV AL, [BP+70H]		
5.	MOV AL, 56H		

3. Ten 8-bit hexadecimal numbers are stored in memory locations starting from 2000H to 2009H. Write an 8086 assembly language program to perform the following equation for stored ten numbers. **10**

$$N = \frac{(Sum\ of\ odd\ numbers - sum\ of\ even\ numbers)}{(number\ of\ odd\ number - number\ of\ even\ number)}$$

Store the 'N' value in location 200AH.

4. a. Mention the interface used for connecting input/output device to 8086 microprocessor.

(1 mark)

b. Explain the various modes of operation in detail of the interface you identified in part (a). **(5 marks)** **10**

c. Write the control word format of the interface you identified in part (a), to connect 3 devices given (i) transceiver (that can both transmit and receive simultaneously), (ii) LCD & (iii) 2 LEDs. Explain the same. **(4 marks)**

5. Explain the function of the following pins of 8051

(i)$\overline{EA}$

(ii) $\overline{PSEN}$

(iii)ALE

(iv)P0.0-P0.7

(v)P3.2($\overline{INT0}$) **5**

6

Write the results after execution of each instruction in the following program

```
ORG 0000H
MOV B,#23H
MOV R1,#7EH
MOV 0E0H, 01H
SETB PSW.7
RLC A
CPL A
ANL A,B
XCH A,B
MUL AB
MOV 25H, R1
MOV @R1,A
END
```

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