PRESIDENCY UNIVERSITY
BENGALURU

SCHOOL OF ENGINEERING

MAKE-UP EXAMINATION – JAN 2023

Course Code: CSE 206

Course Name: MICROPROCESSORS AND MICROCONTROLLERS

Program: B.TECH

Date: 25/01/2023

Time: 9.30AM – 12.30PM

Max Marks: 100

Weightage: 50%

Instructions:
- *(i)* **All questions are compulsory**
- *(ii)* **Write answers in brief**
- *(iii)* **Draw figures wherever necessary**

Part A

Answer all the Questions. Each Sub-Question carries 1 Mark   **(20Qx1M=20 M)**

1) Fill up the blanks for the following:

i) Data & programs are stored together in Memory in _____ Architecture

ii) In 8086, _____ Unit is responsible for decoding the Instruction

iii) Fetching the next instruction while the current instruction executes is called _____

iv) In 8086, _____ holds the address of the next instruction to be executed.

v) In 8086, _____ register is used to hold I/O port address for I/O instruction.

vi) _____ bit of Control Word Register specify the operating mode of 8255?

vii) 8051 is a _____ bit Microcontroller

viii) In 8051, DPTR register is of _____ bits

ix) In 8051, _____ instruction does Data transfer between the accumulator and a byte from external data memory

x) _____ Mode do not have handshake or interrupt capability.

2. Pick the correct one from the following choices:

i) Which Microcontroller is called as ROM-less-8051?
        a. 8031   b. 8032   c. 8051   d. 8052

ii) The instructions that are used for reading from an input port and writing to an output port respectively are
        a. MOV, XCHG   b. MOV, IN   c. IN, MOV   d. IN, OUT

iii) The instruction that loads the AH register with the lower byte of the flag register is
        a. SAHF   b. AH   c. LAHF   d. PUSH

iv) Find the control word of the 8255 for the following configurations:

PA = out, PB = out, PCL = out, and PCH = out"

a. 10000000 = 80H   b. 10110000 = B0H   c. 10010000 = 90H   d. 10001111 = 8FH

v) The instruction that is used for finding out the codes in case of code conversion problems is

a. XCHG   b. XLAT   c. XOR   d. JCXZ

3) Match The Following

	PART-A		PART-B
A	Microcontroller	P	PPI
B	8086 Segments	Q	Assembler Directive
C	8255	R	Handshake
D	.Model	S	Built for specific purpose
E	Mode-1	T	64 KB

Part B

Answer all the Questions. Each question carries 10 marks.   **(4Qx10M=40M)**

4) Discuss in detail, the Control word Register format for 8255 modes.

5) Write an 8086 ALP to display **HELLO** on a 7-Segment Display Interface using 8255 PPI

6) Explain 8086 Architecture with neat diagram.

7) Explain following 8051 Addressing Modes with examples:

Immediate addressing. b) Register addressing c) Direct addressing

Part C

Answer all the Questions. Each question carries 10 marks.   **(4Qx10M=40M)**

8) Define Recursive Procedure. Write an 8086 ALP to find factorial of a number using recursion.

9) Give Flag Register format and discuss Carrry, Auxilary and Parity Flags.

10) Describe the following 8051 Instructions with examples:

a) MOVX   b) XCHD   c) CLR

11) For the following Pascal statement, write appropriate 8086 ALP code

a) IF X := 10 THEN Y: = Y + 4 ELSE Z: = 10;

b) I : = 10; WHILE (I<100) do I: = I + 1;