

**C022511(022)**

**B. Tech. (Fifth Semester) Examination,**

**Nov.-Dec. 2021**

**AICTE**

**(New Scheme)**

**(CSE Branch)**

**MICROPROCESSORS & INTERFACES**

***Time Allowed : Three hours***

***Maximum Marks : 100***

***Minimum Pass Marks : 35***

***Note : Attempt all questions. Part (a) carries 4 marks and is compulsory. Attempt any two from part (b), (c) and (d) carrying 8 marks.***

**Unit-I**

1. (a) Explain the flag register of 8085. 4
- (b) Compare : 8
- (i) Harvard and Princeton architecture.
- (ii) 8085 and 8088 microprocessor

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- (c) Explain the internal architecture of 8085 microprocessor with basic functional block. 8
- (d) Explain the functions of the following signals of 8085. 8
- (i) ALE
  - (ii)  $\overline{IO/\overline{M}}$
  - (iii)  $\overline{RD}$
  - (iv) READY
  - (v) TRAP
  - (vi) INTR &  $\overline{INTA}$
  - (vii) HOLD & HLDA
  - (viii)  $\overline{RESET IN}$

### Unit-II

2. (a) Explain the following instructions : 4
- (i) XCHG
  - (ii) CLD
  - (iii) AAA
  - (iv) CMPS

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- (b) Explain BIU & EU of 8086 microprocessor. 8
- (c) Explain the various addressing modes of 8086 with suitable example. 8
- (d) WAP to find the smallest number among a string of 10 data bytes starting from location 2000H : 3000H and store the result in 2000H : 0500H. 8

### Unit-III

3. (a) What are Maskable and Non-Maskable interrupts? 4
- (b) Draw Interrupt vector table of 8086 microprocessor and explain it's various kinds of interrupts. 8
- (c) Draw the timing diagram of the read and write cycle in minimum mode. 8
- (d) Write a program that uses a character string defined with C and display it so that each word is listed on a separate line. 8

### Unit-IV

4. (a) What do you understand by Address Decoding Technique? 4

[ 4 ]

- (b) Design an interface between 8086 and two chips of 16K × 8 EPROM and two chips of 32K × 8 RAM. Select the starting location of the EPROM suitably. RAM location must start from 00000H. 8
- (c) Explain the internal architecture of DMA 8257 and also its various operating modes. 8
- (d) Explain the control word format of 8255 in I/O and BSR mode. 8

### Unit-V

5. (a) What are segment descriptors? 4
- (b) Explain the internal architecture of 80386 and register organization. 8
- (c) Explain and compare real, protected and virtual mode operation of 80386 microprocessor. 8
- (d) Compare core i3, i5 and i7 and atom processors. 8