

Sl. No of Question Paper

: 1666

100

Unique Paper Code

: 2341601

Name of the Paper

: Add *

P-8

Name of the Course:

: Add #

Semester

: VI

Name of the paper

* Microprocessors

Unique paper Code

: 2341601

Duration of Examination

: Three Hours

Maximum Marks

: 75 Marks

Instructions for the Candidates

- Attempt all questions from **Section A**.
- Attempt any **four** questions from **Section B**.
- Attempt all parts of a question together.

Section A

- Q1.(a) Which is more efficient MOV with an offset or LEA instruction? Justify 3
- (b) In the real mode, determine the starting and ending address of the memory segment if the segment register holds the value 2355H. 3
- (c) What does the instruction LODSW do? 3
- (d) How many bytes of memory store a far direct jump instruction? What is stored in each of the bytes? 3
- (e) What is wrong with the instruction MOV DS, SS? 3
- (f) List the flag bits tested by the conditional jump instructions. 3
- (g) Differentiate between software and hardware interrupts. 3
- (h) Evaluate the address lines and data lines required to map 128K x 8 memory. 3
- (i) What is the purpose of the $\overline{\text{CE}}$ pin on a memory device? 3
- (j) Design a Control Word for 82C55 to set Port A as Output Port, Port B as Input Port in Mode 1 operation. 3
- (k) The instruction MOV [5000H], BX is used to access a peripheral. Comment on the kind of peripheral and the width of its data lines. 3
- (l) Which microprocessor pin and its status forces it to come out from the wait state? 2

Section B

- Q2.(a) For a Core2 descriptor that contains a base address of 01000000H, a limit of 0FFFFH, and G=0, what starting and ending locations are addressed by this descriptor? 4
- (b) Explain with example the instruction LSS BX, [DI]. 4
- (c) Which register or registers are used as an offset address for the string instruction destination in the microprocessor? 2

- Q3.(a) Identify the addressing mode of each of the following instructions: 4
- (i) MOV AL, [5534H]
 - (ii) MOV AX, [BX]
 - (ii) MOV ECX, [SI+BX+200H]
 - (iii) MOV DX, [EBX + 4*ECX+1000H]
- (b) What is the difference between an intersegment and intrasegment jump? 4
If a near jump uses a signed 16-bit displacement, how can it jump to any memory location within the current code segment?
- (c) What is the difference between register addressing mode and direct addressing mode? 2
- Q4.(a) Explain the instructions XLAT and MOVSB with example. 4
- (b) Describe the operations of PUSHAD. Let the current value of SP=2000H. 4
What will be the value of SP after the PUSHAD instruction is executed?
- (c) Which flag bit is tested by the JB instruction? 2
- Q5.(a) Explain and sketch the WRITE operation with the help of bus timing cycle. 4
- (b) How is memory interfacing different for 8086 and 8088 systems? 4
- (c) A 30 MHz crystal is attached to the 8284A clock generator, what is the operating frequency of the 8086 microprocessor? 2
- Q6.(a) Design a decoder circuit to map F6000-F7FFF on 8K x 8 memory. 4
- (b) Write the control word of the 8254 interval timer to configure counter 2 in mode 2 to count LSB only in BCD. 4
- (c) Write the 8086 instruction/s to read 8 bit data from the port with address 3250H. 2
- Q7(a) Define the term interrupt. Why should an interrupt vector have 4 bytes in real mode of memory addressing? 4
- (b) Explain three software commands that are used to control the operation of the 8237 DMA controller. 4
- (c) How is a hardware interrupt requested? 2