

This question paper contains 4 printed pages]

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S. No. of Question Paper : 832

E

Unique Paper Code : 234502

Name of the Paper : Microprocessors (CSHT-512)

Name of the Course : B.Sc. (H) Computer Science

Semester : V

Maximum Marks : 75

Duration : 3 Hours

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt All questions in Section A.

Attempt any four questions in Section B

Section A

(Attempt All questions)

1. (a) What is the purpose of LDTR ? How is the local descriptor table addressed in the memory system ? 3
- (b) Write an instruction that requires BYTE PTR and DWORD PTR. 3
- (c) Give the difference between LDS and LSS instruction. 3

P.T.O.

2. (a) Identify the default segment registers assigned to the following :

(i) EBP

(ii) SI

(iii) SP

(b) How does the IRET instruction differs from the RET instruction ?

(c) What are the three pins in minimum mode operation that are decoded to find whether the process is halted 8086/8088 microprocessor ?

3. (a) List the number of words found in the each memory device for the following numbers of address connections :

(i) 8

(ii) 11

(iii) 13

(b) Explain the ways the data flow for an IN and OUT instruction.

(c) Differentiate between a protected mode interrupt and real mode interrupt.

4. (a) How much memory is accessible to Pentium and Pentium Pro microprocessors ?
(b) How many different interrupt types are available in the microprocessor ? Explain any five.

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Section B

(Attempt any four questions)

5. (a) For an 80486 descriptor that contains a base address of 01000000H, a limit of 0FFFFH, what starting and ending locations are addressed by this descriptor when G = 0 and G = 1 ?

(b) Suppose that EAX = 02201078H, EBX = 01004022H, SI = 0100H, BP = 2342H and DS = 1234H. Determine the addresses accessed by the following instructions, assuming real mode operation :

(i) MOV DH, [EBX + 4 * EAX + 2220H]

(ii) MOV AL, [BP+ SI- 1700H]

6. Describe the operation of each of the following instructions :

(i) PUSHFD

(ii) POP DS

(iii) PUSH CS

(iv) LEA

(v) MOVZX.

7. (a) Contrast the operation of a JMP [DI] with a JMP DI and JMP FAR PTR [DI] instructions.

(b) List the conditional jump instructions which follow the comparison of signed numbers.

5*2=10

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8. (a) Which address lines on the 8086 microprocessor are typically demultiplexed? Draw the diagram of a 8086 microprocessor with a demultiplexed address bus.
- (b) What is the purpose of the following pins of 8086 microprocessor :
ALE, Hold, INTR, Ready
9. (a) What are the *three* modes of operation available to the 82C55 ? Explain any one mode in detail.
- (b) Explain how read-back control word function in the 8254.
10. (a) Explain the following :
(i) One byte interrupt
(ii) Non-maskable hardware interrupt
(iii) Superscalar Architecture in Pentium Microprocessor
- (b) Explain the *three* software commands that are used to control the operation of the 8237 DMA controller.