

This question paper contains 4+2 printed pages]

Your Roll No.....

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B.Sc. (Hons.) Computer Science/V Sem. C

Paper – CS-503 MICROPROCESSORS

(Admissions of 2010 and before)

Time : 3 Hours

Maximum Marks : 75

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

Paper is divided in two Sections as Section A and Section B.

Question No. 1 is compulsory and attempt any four questions from Section B. Parts of a question should be attempted together.

Section A

1. (a) What is the purpose of LDTR and GDTR in 80286 Microprocessor ? 4
- (b) Explain the term handshaking with respect to computer I/O systems. 3

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- (c) What is memory-to-memory DMA transfer ? 3
- (d) List the differences between 8086 and 8088 microprocessors. 4
- (e) How does the IRET instruction differ from RET instruction ? 3
- (f) What are the purposes of \overline{CE} and \overline{OE} pins on a memory device ? 2
- (g) Differentiate between an intersegment and intrasegment jump. 4
- (h) What is wrong with a MOV [BX], [DI] instruction ? 2
- (i) Which is more efficient, a MOV with an offset or an LEA instruction ? 4
- (j) Describe the operation of branch prediction logic used by the Pentium Microprocessors. 3

- (k) Define the term Interrupt and list the interrupt pins found on the 8086/8088 microprocessor. 3

Section B

2. (a) Suppose that DS = 1300H, SS = 1400H, BP = 1500 H and SI = 0100H. Determine the address accessed by each of the following instructions, assuming real mode operation :
- (i) MOV EAX, [BP + 200H]
- (ii) MOV AL, [BP + SI - 200H]
- (iii) MOV AL, [SI - 0100H]. 6
- (b) Explain the differences between multipurpose and special-purpose registers with the help of examples. 4

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3. (a) Describe the operation of each of the following instructions :
- (i) XLAT
- (ii) MOVZX
- (iii) PUSH[BX] 6
- (b) Identify the default segment registers assigned to the following :
- (i) SP
- (ii) EBX
- (iii) DI
- (iv) EBP. 4
4. (a) Explain the two available modes of operation for 8086/8088 Microprocessors. 5

- (b) What is memory banking ? Show how separate bank write strobes are generated for different banks. 5
5. (a) What is CALL instruction ? Explain how near and far CALL instruction functions. 4
- (b) Which type of JUMP Instruction (short, near, far) assembles for the following :
- (i) if the distance is 0210H bytes
- (ii) if the distance is 0020H bytes
- (iii) if the distance is 10000H bytes. 3
- (c) Write *three* instructions which controls the carry flag bit. 3
6. (a) Differentiate between isolated I/O and memory-mapped I/O methods for interfacing I/O to the microprocessors. 5

- (b) Detail the improvements in the Pentium-Pro when compared with the Pentium microprocessor. 5
7. (a) Describe the function of ICW1, ICW2, OCW1 and OCW2 while programming 8259A PIC. 5
- (b) How many bytes can be transferred by the 8237 DMA controller ? 1
- (c) Describe the effect on the microprocessor and DMA controller when HOLD and HOLDA pins are at their logic 0 and logic 1 levels. 4