

*This question paper contains 4 printed pages.]*

**6598**

*Your Roll No. ....*

**B.Sc. (Hons.) Computer Science/V Sem. B**  
**Paper - 503 MICROPROCESSORS**  
(Admissions of 2011 and onwards)

*Time : 3 Hours*

*Maximum Marks : 75*

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

*Answer All questions.*

*Parts of a question should be attempted together.*

- I. (a) Describe segment registers used in the 8086  
microprocessor. 4
- (b) What is the purpose of the TLB located within the  
80486 microprocessor ? 2
- (c) Determine the memory location addressed by the  
following real mode pentium 4 register  
combinations : 4
- (i) SS = 8000 H and ESP = 00009000 H
- (ii) DS = 1239 H and EDX = 0000A900 H

[P.T.O.]

2. (a) How is the instruction MOV CL, DS; [1234 H] is different from MOV AL, DS : [1234 H] 2
- (b) How many bytes of memory are used in for direct jump instruction ? What is stored in each of the bytes ? 3
- (c) If EAX = 00001000 H, EBX = 00002000 H and DS = 0010 H. Determine the address accessed by following instruction, assuming it a real mode instruction : 4
- (i) MOV [EAX + 2 + EB ×], CL
- (ii) MOV ECX, [EAX + EBX]
3. (a) Write a short sequence of instructions that transfer data from a data segment memory array (ARRAY) to as I/O device at I/O address 3ACH. 5
- (b) Differentiate between :- 4
- (i) MOVSX and MOVZX
- (ii) LEA SI, DATA1 and MOV SI, OFFSET DATA
4. (a) Write a near procedure to find out the cube of the contents of the CX register. 4
- (b) What is vector table ? Explain the operations of following instructions : 1+3=4
- (i) INT 3
- (ii) INT 0

- (c) Which conditional jump instruction test both the Z and C flag bits ? 2
5. (a) What are the purposes of the status bits S3 and S4 in 8086 / 8088 microprocessor ? 3
- (b) What is the purpose of the demultiplexed  $\overline{\text{BHE}}$  signal on the 8086 microprocessor ? 2
- (c) Explain the operations of the 8284 A clock generator ? 4
6. (a) Discuss two methods of interfacing I/O to the microprocessor ? 4
- (b) Why  $\overline{\text{BLE}}$  and  $\overline{\text{BHE}}$  pins have no functions while selecting 16-bit wide I/O devices ? 3
7. (a) List the events that occur when a real mode interrupt become active to 8086 micro processor ? 3
- (b) How are IF and TF flags are cleared and set in 8086 microprocessor ? 4
- (c) What are the purposes of IR7-IRO pins of 8259 A programmable interrupt controller ? 2

8. (a) Discuss three software commands used to control the operations of the 8237 DMA controller. 3
- (b) Describe the purpose of following pins of 8289 bus arbiter. 6
- (i)  $S_0 - S_2$
  - (ii)  $\overline{BUSY}$
  - (iii)  $\overline{LOCK}$
- (c) Describe the Internal structure of the pentium pro-microprocessor. 3