Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

BE SEM-VIII Examination May 2012

Subject code: 181104

Subject Name: Advanced Microprocessors

Date: 12/05/2012 **Time: 10.30 am – 01.00 pm**

Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1 **(a)** Distinguish between real mode and protected mode in microprocessor 8086. Also explain real mode in detail. **07**

(b) Write an 8086 program to find out the largest number from an array of 16-bit numbers stored sequentially in the memory locations starting at offset 0500H in the segment 2000H. Also draw the flowchart for the above program. **07**

Q.2 **(a)** Explain the internal architecture of 8086 microprocessor. **07**

(b) Explain data movement instructions in detail. **07**

OR

(b) Write short note on assembler directives. **07**

Q.3 **(a)** It is required to interface two chips of 32K*8 ROM and four chips of 32K*8 RAM with 8086 according to the following map:- **07**

ROM 1 and 2 : F0000H – FFFFFH
RAM 1 and 2 : D0000H – DFFFFH
RAM 3 and 4 : E0000H – EFFFFH

Show the implementation of this memory system.

(b) Write short note on basic I/O interface. **07**

OR

Q.3 **(a)** Draw block diagram of microprocessor 80186 and describe basic features of 80186. **07**

(b) Write short note on 80286. **07**

Q.4 **(a)** Explain bus timings in microprocessor 8086. **07**

(b) What is interrupt? Explain interrupt vectors and vector table in detail. **07**

OR

Q.4 Write short notes: **14**

(a) 80386 microprocessor

(b) 80486 microprocessor

Q.5 **(a)** Write short notes on hardware interrupts in microprocessor 8086. **07**

(b) (i) Explain operation of real mode interrupt. **04**

(ii) Explain following interrupt instructions: **03**

(1) BOUND (2) INTO (3) INT (4) INT 3 (5) IRET

OR

Q.5 **(a)** Draw Pentium system architecture and describe the five stage pipeline mechanism. **07**

(b) Describe in detail the differences between Pentium II, Pentium III, Pentium 4 and Core 2 microprocessors. **07**

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