Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

B. E. Vth Semester–Examination – Nov-Dec- 2011

Subject code: 150701

Subject Name: Advance processors

Date:22/11/2011 **Time: 02:30 pm – 05:30 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)** Answer the following questions **07**

1. What would be the physical address after reset in 8086 microprocessor? Why?
2. Sate the advantages of segmentation in 8086
3. What are the special uses of DX register in 8086
4. Write necessary instructions to set TRAP flag in 8086?
5. What is the use of LOCK pin and TEST pin of 8086?
6. Why does 8086 automatically disable INTR interrupt when responds to any interrupt?
7. What is the difference between RET and IRET instruction?

(b) Answer the following questions

1. Briefly explain the addressing modes in 8086 with examples **03**
2. Explain following instructions and directive with example
   (1) AAA (2) SHORT (3) LOOP (4) PTR **04**

Q.2 **(a)** 1. Write a near procedure which compares two 32 bit numbers and return 0 if they are equal, return 1 if first number is greater than second and return 2 if first number is less than second. **03**

2. Write a main program which finds out maximum number from a given array of 32bit numbers using above procedure. **04**

(b) Briefly explain various methods of passing parameters to and from procedure with their merits and demerits. Define the term reentrant and explain how you must pass parameters to a procedure so that it is reentrant procedure. **07**

OR

(b) Briefly explain short, near direct, near indirect, far direct and far indirect jump in 8086 with example. What is the type of all conditional jumps? What is the range of destination address in conditional jumps? **07**

Q.3 **(a)** Write down the steps followed by 8086 when INT 23H instruction is executed. Briefly explain the different ways to detect and respond overflow in 8086 **07**

(b) What are the differences between minimum mode and maximum mode of 8086? Draw 8086 minimum mode configuration showing address/data demultiplexing, even and odd bank of memory and one I/O port. **07**

OR

Q.3 **(a)** Which instructions are required to enable and disable INTTR interrupt? How does 8086 responds to INTR interrupt? Also draw interrupt acknowledge machine cycle. **07**

(b) What is the role of direction flag in string instructions? Write a program to replace 'X' with 'T' in a given string "GUJARAX XECH UNIVERSIXY". Use string instructions only. **07**

Q.4 **(a)** List the four major processing units in an 80286 microprocessor and briefly describe the function of each. **07**

(b) How do 80386 switches from real mode to protected mode? How 80386 generate address in protected mode and how it is mapped to physical address? What is the size of each segment in protected mode? **07**

OR

Q.4 **(a)** List three major advances that 80386 microprocessor has over the 80286.Describe how the real mode operation of an 80286 is different from protected mode operation **07**

(b) How are tasks in an 80386 system protected from each other? How can operating system kernel procedures and data be protected from access by application programs in an 80386 system? **07**

Q.5 **(a)** Briefly explain handling of interrupts in protected mode of 80386. Briefly explain protection of I/O in protected mode of 80386. **07**

(b) List three major features of a RISC based computer and describe how each of these features helps produce faster execution. **07**

OR

Q.5 **(a)** Briefly explain virtual 8086 mode of 80386. **07**

(b) Describe three major improvements that the 80486 processor has over 80386 processor and three major improvements that the Pentium processor has over 80486 processor. **07**

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