Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. Sem-Vth Examination December 2010

Subject code: 150701

Subject Name: Advance Processors

Date: 13 /12 /2010 **Time: 03.00 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 in brief. **06**

1. What is the minimum and maximum size of a segment in 8086? How are they computed? What is segment overlapping?
2. If AL reg. contains -5 then what will be the binary contents of AL after executing the CBW instruction
3. What is prefetch queue? What is its significance? What happens when branch instruction comes?

(b) Answer the following questions. **08**

1. What is segmentation? List the various segment registers in 8086 and give their role.
2. What are the steps taken by 8086 when interrupt comes? How does 8086 find address of ISR?

Q.2 **(a)** Write an 8086 assembly program to reverse the array of 10 numbers stored in data segment using stack. **07**

(b) Explain following 8086 instructions with example. **07**

LEA, DIV, SHL, LOOP

OR

(b) List the various string instructions of 8086 and explain any two with proper example. **07**

Q.3 **(a)** Explain the following with illustrations. **06**

1. Memory banks in 8086
2. Features of Pentium processor

(b) Define a data segment having **08**

```
fib  DW 10 dup(0)
```

as array of 10 numbers. Write a program to generate first 10 Fibonacci numbers starting from 0 1 and store into array fib.

OR

Q.3 **(a)** Explain following. **06**

1. 80386 descriptor
2. Vector table in 8086

(b) Explain the following regarding 8086 stack segment. **08**

1. How to define a stack of 40 words?
2. How to initialize SS and SP?
3. How is overflow determined while push operation?
4. How does stack and data segment differ?

Q.4 **(a)** How 32-bit linear address is converted to physical address when paging is enabled? Illustrate with proper example. **07**

(b) Explain the meaning and use of Selector and GDTR with proper example. **07**

OR

Q.4 **(a)** Explain the Page Table and Page Directory Entry with example. **07**

	(b)	Explain the following with example. Context switching, Translation-Lookaside-Buffer	**07**
Q.5	**(a)**	What is descriptor table? What is its use? Dedifferentiate between GDT and LDT.	**07**
	(b)	Explain the architecture of SUN SPARC processor.	**07**

OR

Q.5	**(a)**	What are privilege levels? What is their use? Give the role of call gates.	**07**
	(b)	Explain the concept of Hyper Threading and Core-2-duo regarding Intel Pentium processor.	**07**

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