

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

# GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V • EXAMINATION – SUMMER • 2015

**Subject Code: 150701**

**Date: 02-05-2015**

**Subject Name: Advanced Processors**

**Time: 02.30 pm - 05.00 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)** Answer the following questions
1. What are the advantages of segmentation in 8086? **02**
  2. Which 8086 registers are used as memory pointer? Explain the use of memory pointer registers in 8086? **02**
  3. If the Code segment register contains 5000H and the instruction pointer register contains 2400H. What is the physical address? **01**
  4. What are the controlling flags in 8086? Explain in detail. **02**
- (b)**
1. Briefly explain following directives with example  
EVEN , DD , SEGMENT **03**
  2. Briefly explain following instructions with example  
AAM , DIV, XLAT and CBW **04**
- Q.2 (a)** Write an assembly level programme that averages two values of 16-bit number present in the memory location 3000:0100 and 3000:0102. Store the result in the next memory location. **07**
- (b)** If BX=0158h, DI=10A5h, DS=2100h and DS is used as segment register. Explain and calculate effective address and physical address for following addressing modes. Also identify addressing mode used in the instruction **07**
- MOV AL,[BX]  
MOV DX,[BX][DI]  
MOV DL,[BX]+1B57h  
MOV AX,[BX][DI]+1234h
- OR**
- (b)** Write an assembly level programme that will find out the number of even and odd numbers from a given series of 16 bit numbers. **07**
- Q.3 (a)** Explain following
1. Explain the differences between near and far procedure **02**
  2. Explain the differences between Macro and Procedure **02**
  3. Explain the interrupt response sequence of the 8086 microprocessor. **03**
- (b)** What are the differences between minimum mode and maximum mode operation of 8086? Draw minimum mode system with RAM, ROM and I/O port. **07**
- OR**
- Q.3 (a)** Briefly explain respond of 8086 when it receive signal on hardware interrupt pin NMI and INTR. **07**

- (b) Draw and explain memory read machine cycle of 8086 in minimum mode. 07  
Briefly explain ODD and EVEN bank concept in 8086.
- Q.4** (a) Briefly explain six functional units of internal architecture of 80386. 07  
Explain register structure of 80386.
- (b) Explain the physical address formation in protected mode of the 80386 07  
with reference to paging and without paging
- OR**
- Q.4** (a) Briefly explain segment descriptor and call gate descriptor in 07  
80386. Briefly explain use of call gate descriptor
- Q.4** (b) Briefly explain task state segment (TSS) and task register (TR) in 80386. 07  
Briefly explain different ways of task switching in 80386.
- Q.5** (a) Compare real mode, protected mode and virtual 8086 mode in 07  
80386. Briefly explain interrupt handling in Protected mode.
- (b) 1. Explain the advanced features of 80486 compared to 80386. 03  
2. Explain the advanced features of Pentium processor 04
- OR**
- Q.5** (a) Briefly explain superscalar architecture, Hyper thread technology and core 07  
2 duo technology in Intel P6 family processor
- (b) Compare CISC and RISC architecture. Briefly explain Register window in 07  
SUNSPARC.

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