

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VIII • EXAMINATION – SUMMER 2014****Subject Code: 181104****Date: 31-05-2014****Subject Name: Advanced Microprocessors****Time: 10:30 am TO 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) Tabulate the addressing modes possible with 8086 Family Processors. Explain any five giving examples of each. **07**

(b) Explain Protected Mode Addressing along with the need of designing this special mode as compared to Real Mode Addressing. **07**

Q.2 (a) Explain following Instructions with appropriate example. **07**
(1) REP (2) POP (3) XLAT

Discuss Results after Execution of following instructions (ARRAY is Label)

(1) LEA BX,ARRAY (2) MOV EAX,[BP+200]

(3) OUT DX,AL (4) MOVZX DX,AL

(b) What do you understand by the term “Bus Timing”? Explain with reference to Read and Write operations of memory interfaced with 8086 with neat sketch. **07**

OR

(b) Explain the usefulness of READY pin on x86 Family of Processors. Show a sample usage of READY pin using a simplified neat sketch. **07**

Q.3 (a) What do you understand by Address Decoding? List various techniques of Address Decoding for Memory interfacing using 8086 and explain any two among them. **07**

(b) Design a memory interfacing for interfacing a 2 kB Static RAM with 8086, show schematic along with memory map. **07**

OR

Q.3 (a) Which way Input and Output Ports differ with each other? Explain (with neat sketches) how Programmable Peripheral Interface ICs help in interfacing bidirectional ports. **07**

(b) Interface 16-bit-wide Output Port at Port Addresses 2000H and 2001H with 8086. Show interfacing schematic and address mapping. **07**

Q.4 (a) Write an assembly language program to produce a packed BCD byte from 2 ASCII encoded digits. Assume appropriate data mentioning the assumption. **07**

(b) Write an assembly language program that will switch the Fan ON when temperature reaches 30°C and will switch the Fan OFF when temperature reaches 20°C. Assume appropriate hardware showing brief schematic. **07**

OR

Q.4 (a) Write an assembly language routine or macro to compare two memory blocks. Store the result of comparison at the end of first memory block. Assume appropriate data mentioning the assumption. **07**

(b) Write an Interrupt Service Subroutine that will read the key press upon interruption and will show the key-code on display. Assume appropriate hardware showing brief schematic. **07**

Q.5 (a) Explain task switching in context of 80386. How many different ways task switching can be accomplished? **07**

(b) Describe the advancements done in the Pentium series of processors as compared to its predecessors. **07**

OR

Q.5 (a) What is the use of paging mechanism? Show how paging is done in any of x 86 families of processors. **07**

(b) Write a short-note on Hyper-Threading Technology employed in Pentium Processors. **07**
