

GUJARAT TECHNOLOGICAL UNIVERSITY**B. E. - SEMESTER – VI • EXAMINATION – WINTER 2012****Subject code: 160805****Date: 07/01/2013****Subject Name: Advanced Microprocessors****Time: 02.30 pm - 05.00 pm****Total Marks: 70****Instructions:**

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

- Q.1** (a) What do you mean by addressing modes? Explain addressing modes of 8086 microprocessor. **07**
- (b) (i) Explain priority of interrupt. **03**
(ii) What are the interrupt vector addresses of the following interrupts in the 8086 IVT? **04**
(a) INTO (b) NMI (c) INT 20 (d) INT 32
- Q.2** (a) (i) Differentiate 8-bit microprocessor Vs 16-bit Microprocessor **04**
(ii) Which are the advantages of segmentation? **03**
- (b) Consider the following instruction: **07**
Mov dx, ds: word ptr[0000] .Explain how many machine cycles are required to execute above instruction with the help of diagram. Instead of above instruction, if the instruction is Mov dx, ds: word ptr[0001] then explain the details of number of machine cycle with clean diagram. Assume ds: 0000H .Discuss all the cases of BHE and A0 with example.
- OR**
- (b) Suppose that DS=0200H, BX=0300H, SI=0400H, SUM=20H. Determine the memory address accessed by each of the following instructions and also identify the addressing mode of each instruction. **07**
(i) MOV AL, Byte PTR[1234H] (ii) MOV DL,AL
(iii) MOV AX, Word PTR SUM[BX][SI]
- Q.3** (a) What is the difference between directive and instruction? Explain the following directive (i) ASSUME (ii) OFFSET (iii) EQU (iv) DT(v)PTR **07**
- (b) Explain general purpose register of 8086 in detail. **07**
- OR**
- Q.3** (a) Explain string instructions of 8086 microprocessor in detail. **07**
- (b) Explain Maximum Mode of 8086 microprocessor. **07**
- Q.4** (a) Briefly describe the conditions which cause the 8086 to perform each of the following types of interrupts: **07**
type 0, type 1, type 2, type 3, type 4.
- (b) Write an assembly language program which produce a packed BCD byte from 2 ASCII –encoded digits and result should be stored in AL register. **07**
- OR**
- Q.4** (a) List and describe in general terms the steps an 8086 will take when it responds to an interrupt. **07**
- Q.4** (b) What is MACRO? How it differs from Procedure? Explain use of macro with one simple program. **07**
- Q.5** (a) Draw the block diagram of coprocessor and explain each unit. **07**
- (b) Explain arithmetic instruction set of 8086 in detail. **07**
- OR**
- Q.5** (a) Describe Memory mapped I/O and Direct I/O. Give the main advantage and main disadvantage of each. **07**
- (b) Which are the different flags in 8086 microprocessor? Explain function of each flags in detail. **07**
