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**MANIPAL INSTITUTE OF TECHNOLOGY**
(A constituent Institute of MANIPAL UNIVERSITY)
**MANIPAL - 576 104, KARNATAKA, INDIA**

**FOURTH SEMESTER B.E (CSE) DEGREE END SEMESTER EXAMINATION**
**MAY-2011**
**MICROPROCESSORS (CSE 208)**

**TIME: 3 HOURS** **MAX.MARKS: 50**

**1A**. Explain the segment registers of 8086. **4M**

**1B.**List and explain all rotate instructions of 8086. **2M**

**1C**. Mention the addressing modes & define them for the following instructions:

**i** . MOV [BX] [SI], CL **ii**. XCHG CH, ES: [BX]

**iii**. MOV [BP+SI+1000H], CL **iv**. ROR AX, 1 **4M**

**2A**. Explain the 8086 conditional flags. **4.5M**

**2B**. Write an assembly language program to display a message 'Happy Birthday' on the screen after a key 'A' is pressed. **2.5M**

**2C**. Write a program to generate a delay of 100ms using an 8086 system that runs on 10 MHZ frequency. **3M**

**3A**. Explain the following with example.

**i.** indirect within segment near call

**ii.** indirect intersegment far call **4M**

**3B**. Write an assembly language program to convert BCD to BINARY number using procedures. **4M**

**3C**. Differentiate between reentrant and recursive procedures. **2M**

**4A**. Draw and explain the timing diagram of 8086's minimum mode input operation. **4M**

**4B**. Write the function of the following pins of 8086:

**i.** HOLD **ii.** HLDA **2M**

**4C.** What is the interrupt vector table of 8086? Explain its structure. **4M**

**5A**. Draw & brief any one timing diagram of a programmable timer 8254 for each the following operations.

**i.** To generate a square wave (MODE 3) **ii.** To interrupt the processor (MODE 2)

**iii**. To derive a hardware-triggered strobe(MODE 5) (3x2=**6M**)

**5B**. Draw the diagram for detail organization of 8237 DMA controller. **2M**

**5C**. Describe the use of the following signal of programmable interrupt controller 8259A.

i. $\overline{PS}/\overline{EN}$ ii. INT iii. CS iv.IR0-IR7 **2M**

**6A**. Explain any four addressing modes of 68000 microprocessor. **2M**

**6B**. Explain the various data types of 8087. **2M**

**6C**.How does 80386 computes physical address in paging mode. Differentiate between 80286, 80386 and 80486. (3x2=**6M)**

**********ALL THE BEST! **********