2008-VISVESVARAYA TECHNOLOGICAL UNIVERSITY

COMPUTER SCIENCE AND ENGINEERING

MICROPROCESSOR

B.E DEGREE EXAMINATION

TIME-3HOUR
MARK-80

ANSWER ANY FIVE QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS

1 a.With a neat diagram,explain the architecture of 8086 microprocessor along with functions of each block and registers.

b.Explain the addressing modes used in 8086 with an example for each.

2 a.State and explain instruction formats of 8086.Also generate the opcode for following instructions:

i)MOV AX,BX ii)MOV 46h[BP],DX iii)MOV CS:[BX],AL iv)IN AL,DX

b.Explain the following assembler directives with example:

i)PROC and ENDP ii)PUBLIC and EXTRN iii)MACRO AND ENDM iv)ASSUME V)SEGMENT,ENDS

c.Explain the following instructions:

i)div ii)XLat iii)AAA iv)XCHG

3 a.Write an ALP to find factorial of a number using recursion.

b.Explain the types of program execution transfer instruction (branch instructions) with examples.

c.Write a delay procedure for producing a delay of 1 sec for 8086 microprocessor working at 10MHz.

4 a.Explain string related instructions with examples.

b.Bring out the differences between macro and procedure.

c.Explain the sequence of operations that takes place when a procedure is called and returned from procedur e back to calling program

5 a.Write an ALP to find NCR using recursive procedure.Assume N and R are non-negative numbers.

b.Write an ALP to read a string from keyboard convert to uppercase and display on monitor.

6 a. Explain minimum mode PINS of 8086 and minimum mode configuration of 8086 with a neat diagram.

b. Bring out the differences between 8086 and 8088 microprocessors.

c. Interface 8 K ROM using 2732 chip and 4K RAM using 6116 chip to 8086 assuming starting address for ROM as 40000h and for RAM it is 44000h.

7 a. Explain the types of interrupts along with action taken by 8086 when an interrupt occurs. Also explain the interrupt vector table.

b. Explain with block diagram , the working of 8259 and also explain ICW'S and OCW'S.

8 a. Explain the control word format of 8255 and modes of operation of 8255. Also write the control word to select PC2,PC4 and set PC2,reset PC4.

b.Explain how do you interface a stepper motor to 8086 to rotate the motor in clockwise direction by 360 degreeand then anticlockwise direction by 180 degrees using 8255 with a neat diagram.