10CS45

Fourth Semester B.E. Degree Examination, June/July 2017
Microprocessors

Time: 3 hrs.

Max. Marks:100

Note: Answer FIVE full questions, selecting
at least TWO questions from each part.

PART – A

1 a. Explain the program visible internal register – organization of 8086 microprocessor.
(05 Marks)
   b. What is real mode addressing? Explain default segment and offset registers.   (05 Marks)
   c. Write any five differences between real mode and protected mode memory system.
(05 Marks)
   d. What is pipelining? How is it achieved in 8086?   (05 Marks)

2 a. Explain with example the various data related addressing modes of 8086.   (08 Marks)
   b. Explain the various descriptors used in 80286 – core 2 processors operating in protected mode.   (06 Marks)
   c. Generate the machine code for the following 8086 instruction:
      (i)   MOV AX, BX
      (ii)   MOV CL, [SI]   (06 Marks)

3 a. Write an assembly language program to add 10 non-negative 8 bit numbers.   (08 Marks)
   b. Explain the following instructions with examples:
      (i) XCHG (ii) LEA (iii) LAHF (iv) CMP (v) LODSB (vi) STOSB   (06 Marks)
   c. What do you mean by assembler directives? Explain the following directives : (i) ORG (ii) PROC and ENDP (iii) OFFSET.   (06 Marks)

4 a. Explain the various string manipulation instructions with example.   (10 Marks)
   b. Differentiate between short, near and far jump instructions with two examples of each.
(10 Marks)

PART – B

5 a. Differentiate between macros and procedures.   (06 Marks)
   b. Define modular programming. Explain with suitable example.   (07 Marks)
   c. Distinguish between the 16 bit and 32 bit versions of C/C++ when using the assembler.
(07 Marks)

6 a. Bring out the differences between 8086 and 8088 microprocessor.   (06 Marks)
   b. With neat timing diagram, explain 8086 memory read cycle.   (07 Marks)
   c. With neat diagram, explain the minimum mode system of 8086 microprocessor.   (07 Marks)

7 a. Mention the differences between memory mapped I/O and isolated I/O.   (06 Marks)
   b. How 8086 microprocessor selects 8 bit on 16 bit data from odd or even memory banks?
(06 Marks)
   c. With neat diagram, explain simple NAND gate address decoding logic to select $2K \times 8$ EPROM for 8086 processor.   (08 Marks)

8 a. Explain briefly the interrupt vector table of 8086 microprocessor.   (10 Marks)
   b. Explain the pin-out of 8255 along with different operational modes.   (10 Marks)

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