USN | | | | | | | | | | 10CS45

Fourth Semester B.E. Degree Examination, Dec.2013/Jan.2014
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 memory structure of Intel personal computer in detail with neat schematic.
                                                                                                      (08 Marks)
   b. Briefly explain various multipurpose registers in 8086.   (06 Marks)
   c. What is real mode addressing? Explain default segment and offset registers.   (06 Marks)

2 a. Illustrate the memory paging mechanism in the 80386 microprocessor with suitable
      schematic.   (06 Marks)
   b. Briefly explain various addressing modes of 8086 with suitable examples.   (10 Marks)
   c. What do the following MOV instructions accomplish?
         MOV RAX, RCX
         MOV ESP, [BSP]
         MOV AX, 2341H
         MOV CS, AX   (04 Marks)

3 a. Write and explain machine code for instruction MOV DL, [BX]   (10 Marks)
   b. Describe the operation of each of the following instruction in brief:
      ·PUSHF   ·MOVS   ·LAHF   ·DIV   ·XCHG   (05 Marks)
   c. What is segment override prefix? Illustrate the same with an example.   (05 Marks)

4 a. Explain with an example how multiple if then else statement can be implemented
      using ALP.   (10 Marks)
   b. Differentiate between short, near and far jump instructions with two examples of each.
                                                                                                      (10 Marks)

PART – B

5 a. Illustrate a simple program that uses a character string defined with and display on a
      separate line.   (10 Marks)
   b. Differentiate between:
      (i) Assembler and linker   (ii) Public and EXTRN   (iii) Macros and Procedure.   (06 Marks)
   c. Write an ALP to compute factorial of single digit positive number using recursive
      procedure.   (04 Marks)

6 a. Explain minimum mode PINS of 8086 and minimum mode configuration of 8086 with neat
      diagram.   (10 Marks)
   b. Describe internal block diagram of 8288 Bus controller with explanation of each pins.
                                                                                                      (06 Marks)
   c. With neat timing diagram, explain the I/O read operation.   (04 Marks)

7 a. With neat diagram, explain simple NAND gate address decoding logic.   (10 Marks)
   b. Differentiate between Memory mapped I/O and direct I/O.   (05 Marks)
   c. Briefly explain handshaking or polling with necessary diagrams.   (05 Marks)

8 a. Explain pin-out of 82C55 along with different operational modes.   (10 Marks)
   b. Explain the structure of 8086 interrupt vector table with a neat diagram.   (10 Marks)

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