Sixth 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 with block diagram the personal computer model showing address, data and control bus structure. **(05 Marks)**
   b. With a neat sketch, explain the execution unit and bus interface unit of the 8086 microprocessor. **(10 Marks)**
   c. Explain segmentation in 8086 and advantages of using segment registers. **(05 Marks)**

2. a. Explain the different string instructions of the 8086. **(08 Marks)**
   b. What are assembler directives? Explain the following :
      (i) total db 00h   (ii) inc word ptr [si]   (iii) mov dx, offset msg   (iv) assume **(08 Marks)**
   c. Explain :
      (i) MN / $\overline{MX}$ (ii) $AD_{15} - AD_0$ (iii) $\overline{RD}$ (iv) $\overline{WR}$ **(04 Marks)**

3. a. Write a display macro using for statement to display 'VTU' on the screen. **(05 Marks)**
   b. Write an assembly language program to arrange '10' bytes of data in descending order. **(10 Marks)**
   c. Differentiate between macros and procedures. **(05 Marks)**

4. a. Draw the 8086 interrupt-pointer table and explain the dedicated interrupt pointers, reserved interrupt pointers and available interrupt pointers. **(10 Marks)**
   b. Explain the priority of 8086 interrupts. **(05 Marks)**
   c. Write a program to check if a given byte is bitwise palindrome. **(05 Marks)**

PART – B

5. a. Explain the different key switches used on keyboards. **(08 Marks)**
   b. Explain the detection of matrix keyboard, key press, debouncing and encoding with a microcomputer using 4*4 keyboard. Also draw the flowchart for the same. **(12 Marks)**

6. a. Explain the 8087 architecture. Also explain the bit pattern of status register and control register. **(12 Marks)**
   b. Explain :
      (i) FLDZ   (ii) FLD1   (iii) FLDPI   (iv) FLDL2E **(08 Marks)**

7. a. Write a note on parallel printer interface (LPT). **(10 Marks)**
   b. Explain the write cycle timing diagram for minimum mode. **(07 Marks)**
   c. Explain the following :
      (i) M / $\overline{IO}$ (ii) ALE   (iii) $\overline{INTA}$ **(03 Marks)**

8. a. Draw the internal programming model of the 80486 and explain. **(10 Marks)**
   b. Explain the memory system of 80386. **(05 Marks)**
   c. Write a brief note on Pentium processors. **(05 Marks)**

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