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Sixth Semester B.E. Degree Examination, Dec.2016/Jan.2017
Microprocessor

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 architecture of 8086 microprocessor with a neat block diagram. (10 Marks)
b. Define addressing modes of 8086 and identify the addressing modes of the following instructions: i) add ax, [si] ii) mov al, [1000] iii) mov [bx + si + 06], bl
iv) mov bx, [bp + 50] (10 Marks)
- 2 a. Discuss the functions of following instructions:
i) xlat ii) aam iii) das iv) imul bx (10 Marks)
v) lds bx, [1234h] (06 Marks)
b. Write an ALP to multiply two-16 bit packed BCD numbers. (06 Marks)
c. Define the following assembler directives:
i) ALIGN ii) EVEN iii) ENDS iv) LOCAL (04 Marks)
- 3 a. Describe the following string instructions :
i) repe movsb ii) cmpsb iii) scasb iv) lodsb (08 Marks)
b. Write an ALP to scan for a character in a string and replace by another character. Use assembler directives. (08 Marks)
c. Write a program to convert binary byte to ASCII equivalent. (04 Marks)
- 4 a. Define an interrupt. Explain 8086 interrupts and response mechanism. (08 Marks)
b. Write a macro for the following cases:
i) Read a character from keyboard without echo.
ii) Display a message on the CRT monitor.
iii) Display an integer on CRT monitor. (06 Marks)
c. Write a subroutine to print a string on printer. Call this subroutine from a main program to print two message strings. (06 Marks)

PART – B

- 5 a. Interface 4×4 keyboard to 8086 microprocessor using 8255 PPI. Write the necessary circuit diagram and program. (10 Marks)
b. Write an ALP to interface seven segment display to 8086 and demonstrate the display as flashing display. Write the necessary circuit diagram. (10 Marks)
- 6 a. Write the control word format of 8087 and define various fields. (04 Marks)
b. What are the functions of following 8087 instructions? Explain.
(i) FENI (ii) FCOMP (iii) FSTENV (iv) FLDL2E (10 Marks)
(v) FLDZ (06 Marks)
c. Write 8087 ALP to compute the volume of the sphere. (06 Marks)
- 7 a. With a neat block diagram, explain the maximum mode operation of 8086. (10 Marks)
b. What are the characteristics of PCI and USB interface? (06 Marks)
c. Show an interface of printer to a 8086 microprocessor. Define the signals of importance. (04 Marks)
- 8 Write short notes for the following:
a. Pentium microprocessor. (08 Marks)
b. Special registers of 80386. (06 Marks)
c. Memory structure of 80386. (06 Marks)

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