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**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 × 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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