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**Fourth Semester B.E. Degree Examination, December 2011**  
**Microprocessors**

Time: 3 hrs.

Max. Marks:100

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

**PART – A**

- 1 a. Define microprocessor. With a neat block diagram, explain the overview of microcomputer. (06 Marks)  
 b. What is flag register? Explain the flag register format, in detail (06 Marks)  
 c. List and explain the addressing modes supported by 8086. (08 Marks)
- 2 a. Is coding the instruction for 16-bit processor is difficult? Give reasons. (04 Marks)  
 b. Generate the machine equipment code for the following 8086 instruction:  
     MOV CS:[BX], DL (06 Marks)  
 c. Explain the assembly language programming development tools. Write the algorithm for each. (10 Marks)
- 3 a. Write an assembly level program to convert two ASCII codes to packed BCD numbers. (06 Marks)  
 b. What is the need for unconditional jump instructions? Explain the different unconditional jump instructions, supported by 8086. (08 Marks)  
 c. Write a delay loop, which produces a delay of 500 $\mu$ s on 8086 microprocessor, with 5 MHz clock. (06 Marks)
- 4 a. Explain the string instructions supported by 8086. (08 Marks)  
 b. Write an assembly level program to check a given string is pallendrome or not, using the string instruction. (08 Marks)  
 c. Define and differentiate between reentrant and recursive procedures. (04 Marks)

**PART – B**

- 5 a. What is effect of using the following instructions or directives in 8086 programming:  
     i) GLOBAL   ii) CALL   iii) LAHF   iv) TYPE   v) NEG  
     vi) DQ       vii) LEA   viii) TEST   ix) GROUP   x) XLAT (10 Marks)  
 b. Write an assembly level program to find the binomial-coefficient, using recursion. (10 Marks)
- 6 a. Write and explain all the signal activities on 8086 buses, during a simple read operation. (10 Marks)  
 b. What is the need for memory banking? With a neat block diagram, explain the memory banking, in 8086. (10 Marks)
- 7 a. List and explain the hardware interrupt applications. (08 Marks)  
 b. With a neat block diagram, explain the 8259A system connections. (09 Marks)  
 c. List the differences between 8086 and 8088. (03 Marks)
- 8 a. With a neat block diagram, explain the internal block diagram of 8255A. (08 Marks)  
 b. Design a control word for interfacing keyboard. (02 Marks)  
 c. Write on assembly level program to interface logic controller for multiplication of two 8-bit numbers. (10 Marks)

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