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10CS45

**Fourth Semester B.E. Degree Examination, June/July 2015**  
**Microprocessors**

Time: 3 hrs.

Max. Marks:100

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

**PART - A**

- 1 a. Draw and discuss the Register Organization of 8086 through core 2 microprocessors. (10 Marks)  
b. Explain the real mode memory addressing of 8086 processor. (10 Marks)
- 2 a. Define paging. Discuss the memory paging with diagram. (08 Marks)  
b. Explain Data related addressing modes of 8086, with an example. (08 Marks)  
c. Define physical address. Discuss how physical address is generated in 8086 processor. (04 Marks)
- 3 a. Explain the following instruction with an example : i) XLAT ii) LEA iii) CMP  
iv) MUL v) TEST. (10 Marks)  
b. What are assembler directives? Explain the following assembler directives with an example  
i) PUBLIC ii) ORG iii) DW iv) ASSUME. (07 Marks)  
c. What is meant by segment override prefix? Explain with examples. (03 Marks)
- 4 a. Discuss shift and rotate instructions, with an example. (08 Marks)  
b. Explain FAR procedure and near procedure with an example. (06 Marks)  
c. Write an assembly level program to reverse a given string and check for palindrome (06 Marks)

**PART - B**

- 5 a. What are the differences between a PROCEDURE and a MACRO? (04 Marks)  
b. Write an 8086 ALP using DOS interrupt to read a two hexadecimal number and display the same on monitor. (08 Marks)  
c. Define Modular programming. Explain various phases in program development and execution in the context of modular programming. (08 Marks)
- 6 a. Explain the functions of the following 8086 signals : (06 Marks)  
i) ALE ii)  $\overline{MN}/\overline{MX}$  iii) NMI iv) QS0, QS1 v) RESET vi)  $\overline{DT}/\overline{R}$  .  
b. Indicate the signals which are different when 8086 in minimum mode and in maximum mode. (04 Marks)  
c. Describe the working of 8086 in minimum mode configuration. (10 Marks)
- 7 a. Discuss in brief commonly used memories. (08 Marks)  
b. With neat diagram, explain the Linear decoding techniques. (08 Marks)  
c. Compare and contrast the memories mapped I/O to I/O mapped I/O. (04 Marks)
- 8 a. Draw and discuss the Interrupt structure of 8086. (06 Marks)  
b. With functional block diagram, explain working principle of 8255 PPI. (08 Marks)  
c. Discuss the DMA controller operating in a microprocessor system. (06 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and or equations written eg. 42+8=50, will be treated as malpractice.