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10CS45

Fourth Semester B.E. Degree Examination, Dec.2015/Jan.2016
Microprocessor

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 explain the programming model of 8086 through Pentium processors. (06 Marks)
b. Explain with neat block diagram the working principle of 8086 Architecture. (08 Marks)
c. Discuss the Flag registers of 8086 with examples. (06 Marks)

2 a. Briefly explain the concept of Memory paging in 80386 microprocessor, with suitable schematic diagram. (08 Marks)
b. Explain the execution of PUSH and POP Instruction, with respect to Stack Addressing mode. (06 Marks)
c. Discuss the Importance of protected mode memory addressing. (06 Marks)

3 a. Write 8086 ALP for Reverse a string and check is it palindrome. (06 Marks)
b. Explain the following Instructions with examples :
i) XLAT ii) LEA iii) CMP iv) SAHF. (08 Marks)
c. What are Assembler Directives? Explain any four directives with suitable examples. (06 Marks)

4 a. Explain short, near and far jump instructions with examples. (08 Marks)
b. Discuss the following instructions with examples :
i) SHR ii) SHL iii) RCR iv) TEST. (06 Marks)
c. Briefly explain the string comparison instructions. (06 Marks)

PART - B

5 a. Differentiate between Macros and Procedures. (06 Marks)
b. Explain the basic rules for using Assembly language with C/C++ for 16 bit DOS applications with the help of examples. (08 Marks)
c. What is Inline Assembly? Explain its need. (06 Marks)

6 a. Explain the functions of following pins in 8086.
i) MN / $\overline{MX}$ ii) ALE iii) $\overline{BHE}$ iv) INTR. (08 Marks)
b. With neat diagram, explain minimum mode of 8086 system. (07 Marks)
c. Explain Bus timings for Read and Write operation for minimum mode of 8086 system. (05 Marks)

7 a. Explain any two methods of Address decoding technique with schematic diagram. (08 Marks)
b. Design an 8086 based system with the following specifications :
i) 8086 in Minimum mode ii) 64 Kbyte EPROM iii) 64 Kbyte RAM.
Draw the completer schematic diagram of the design Indicating memory map. (08 Marks)
c. Differentiate between Memory mapped I/O and Direct I/O. (04 Marks)

8 a. Explain with neat block diagram the working operation of 8255 PPI. (08 Marks)
b. Discuss the basic DMA controller operation in Microprocessor system. (06 Marks)
c. Explain any three types 8086 Interrupts. (06 Marks)

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