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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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