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Total Number of Pages: 2

B.TECH
PCEC4301

5th Semester Regular / Back Examination 2015-16

MICROPROCESSORS

BRANCH: AEIE, BIOMED, EC, EIE, ETC, IEE

Time: 3 Hours

Max marks: 70

Q.CODE: T162

**Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.**

- Q1 Answer the following questions: (2 x 10)**
- a) Why the 8086 is called as 16-bit microprocessor?
 - b) Which flag is not affected during INC, DEC instructions of 8086 microprocessor?
 - c) Find the frequency of output pins of OSC, CLK & PCLK of 8284. Assume that the crystal frequency of 8284 is 14MHz.
 - d) What is the significance of a segment register in 8086 microprocessor?
 - e) What is the difference between the following two instructions:
MOV BX, TABLE ADDRESS
LEA BX, TABLE ADDRESS
 - f) Define baud rate.
 - g) What is the need of two internal address lines A_1 , A_0 in 8255 PPI?
 - h) Find the BSR Control work of 8255 PPI in order to set and reset PC_5 .
 - i) If the port address is 16-bit, in which register it will be stored such that we can address the I/O ports?
 - j) How many channels are there in 8237 DMA Controller and name the two registers available in a channel of 8237.
- Q2 a) Explain the register organization of 8086 microprocessor. How the physical address is computed in 8086? Explain in detail (3+2)**
- b) What is the different string group of instructions available in 8086 microprocessor? Explain them with the help of examples. Which flag of 8086 microprocessor controls the string access? (4+1)**
- Q3 a) Draw and explain the Read Bus Cycle of 8086 microprocessor. (5)**
- b) Write a sequence of instructions that inputs the byte of data from input ports at I/O address A000H and B000H, adds these values together, and saves the sum in a offset memory location 2000H. (5)**
- Q4 What are the different operand types available in 8086 microprocessor? Explain the limitation of source and destination operands within in an instruction. Explain the addressing modes of 8086 microprocessor with the help of two examples for each of them. (2+2+6)**

- Q5** a) Explain the different operating modes of 8255 PPI with the help of necessary control words. (5)
b) If A3H is written to the control register of an 8255PPI, what is the mode and I/O configuration of Port A? Port B? (5)
- Q6** a) Draw the block diagram of 8254 timer and explain the operating modes in brief. Explain the control word of 8254.. (5)
b) What count must be loaded into the Counter-1 of 8254 in order to produce a square wave of 25KHz. Assume that Counter-1 is operating at 1MHz. (5)
- Q7** a) Explain the meaning of the following 8086 microprocessor instructions: (5)
1. DAA
2. LAHF
3. CALL
4. XCHG
5. JCXZ
b) Write an 8086 assembly language program in order to add a series of decimal numbers. Assume that the final sum will not exceed 8-bit. (5)
- Q8** **Write short notes on any two:** (5 x 2)
a) 8086 Assembler Directives
b) Data Transfer Schemes
c) Minimum mode and Maximum mode 8086
d) 8279 Keyboard and Display controller