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Total Number of Pages: 02

B.Tech.
PEL51102

5th Semester Regular/Back Examination 2018-19
MICROPROCESSOR AND MICROCONTROLLER

BRANCH : EEE

Time : 3 Hours

Max Marks : 100

Q.CODE : E389

Answer Question No.1 (Part-1) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part- I

Q1 Short Answer Type Questions (Answer All-10) (2 x 10)

- Mention the number of address and data lines available in 8 GB memory chip.
- What are HOLD and HLDA signals? How are they used?
- What is the need for programmable interrupt controller?
- Explain 8086 AAA instruction.
- Name the special function registers of 8051.
- When 8051 overflow (OV) flag is set?
- What is the advantage of using SJMP rel addr over LJMP addr16 in 8051?
- Write instructions in 8051 to save the content of register A into register R7 of bank2.
- Mention first sixteen interrupt types present in the 8086.
- What are the machine cycles and the total T-states in the instruction SHLD 3000H?

Part- II

Q2 Focused-Short Answer Type Questions- (Answer Any EIGHT out of TWELVE) (6 x 8)

- What is addressing? What are the various addressing modes available in the 8085?
- Write 8085 program to find the square of a number by adding successive odd numbers.
- Draw and explain in brief the timing diagram for the instruction STA 4501H in the 8085 processor, with appropriate control and status signals.
- Write a program in 8085 to remove the blanks (bytes with zero value) from an array of ten data bytes. Use two memory pointers: one to get a byte and the other to store the byte.
- Show the interfacing of the DAC chip with the 8085 processor using the 8255. Write a program to generate a square waveform.
- Explain the function of different flags in the 8086 processor.
- Discuss RAM memory space allocation of 8051 microcontroller.
- Interface two 8KB × 8 EPROM and a 8KB × 8 RAM with the 8085 processor, using 74LS138 decoder, such that the starting address assigned to them are 0000H, 6000H and 8000H respectively.
- Write an ALP in 8086 to transfer ten data words from offset address 2000H to offset address 3000H.
- Draw and explain the architectural details of the 8051 microcontroller.
- Write initialization instructions for the 8259 PIC to meet the following specifications : (i) Interrupt vector address: 2060H, (ii) Call address interval : 4 – bytes and (iii) Fully nested mode.
- Write a program to multiply two 8 – bit numbers in the internal RAM and store the result in the external RAM.

Part-III

Long Answer Type Questions (Answer Any TWO out of FOUR)

Q3 Write a brief note on the I/O modes of the 8255 PPI. **(16)**

Q4 What are the different control words of the 8279 keyboard display controller? Explain the function of each command. **(16)**

Q5 Draw the register organization of the 8086 microprocessor and explain typical functions of each register. **(16)**

Q6 Write a main program to count continuously in binary with a 2 second delay between each count. Write a service routine to generate the necessary time delay. Assume that the operating frequency of the 8085 is 5 MHz. **(16)**