Registration No : | | | | | | | | | | |

Total Number of Pages : 02 **B.Tech.**
PEE5I102

5th Semester Regular/Back Examination 2018-19
MICROPROCESSOR AND MICROCONTROLLER
BRANCH : ELECTRICAL
Time : 3 Hours
Max Marks : 100
Q.CODE : E387

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)

a) Mention three ways to disable 8085 maskable interrupts.
b) What are the schemes in 8085 to address memories and I/O devices?
c) What is the difference between inter – segment and intra – segment jump in the 8086 processor?
d) List the various operating modes of the 8253 timer/counter.
e) What is the function of the segment override prefix? Give two examples.
f) How does port C of 8255 differs from port A and B?
g) What is the function of RS1 and RS0 bits in the PSW of the 8051?
h) What is the need for DMA controller?
i) Explain immediate addressing in 8086 with an example.
j) Find the address to which program execution is transferred after the execution of the instruction SJMP F0H, if it is stored in the address 8811H.

Part- II

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

a) What is a microprocessor? Sketch and explain the various pins of 8085 microprocessor.
b) Write 8085 program to convert a packed BCD number to unpacked BCD number.
c) Explain the timing diagram for: (i) opcode fetch cycle and (ii) I/O write cycle.
d) Interface a 16KB × 8 EPROM memory chip and a 16KB × 8 RAM chip with the 8085 using logic gates. Draw the memory map also.
e) With a neat diagram, show the interfacing of four switches and four LEDs to 8085 using 8255 PPI. Give the necessary initialization instructions.
f) Explain the initialization process of the 8259 programmable interrupt controller.
g) Write a program to find the smallest word in an array of 100 words stored sequentially in the memory, starting at the offset address 1000H in the segment address 5000H. Store the result at the offset address 2000H in the same segment.
h) Discuss 8086 instruction register format.
i) Write 8085 subroutine to generate a delay of 1 second.
j) Describe the block diagram of the 8279 keyboard/display controller.
k) Explain how data can be transferred using 8251 USART at different baud rates.
l) Discuss 8051 addressing modes with suitable examples.

Part-III

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

Q3 Explain the architecture of the 8086 with a neat function block diagram. **(16)**

Q4 What is meant by 'priority of the interrupts'? Draw and explain the interrupt structure of the 8085. **(16)**

Q5 Explain the operation of the following instructions in 8085. Also specify the number of T – states and name of the machine cycles involved in each instruction : **(16)**

a) ADD R,
b) CPI 8-bit,
c) JZ 16-bit
d) CALL 16-bit

Q6 Describe in detail how the 8257 DMA controller can be interfaced with the 8085 processor. **(16)**