

M.Tech. 1st Semester
Examination, December-2018
ELECTRICAL POWER SYSTEMS
Paper- MTEPS-101

Micro Processor and Micro Controller

Time allowed : 3 hours [Maximum marks : 100]

Note: Attempt any five questions out of eight questions.

1. (a) Describe various flags of 8086, as either a control flag or a flag that monitors the status due to execution of an instruction. 10
- (b) Explain memory segmentation in 8086. Find the offset required to map to physical address location $002C4_{(16)}$ if the contents of the corresponding segment registers are $0029_{(16)}$? 10
2. (a) What are various assembler directives in 8086? Explain. 10
- (b) Explain the machine language instruction format in 8086 microprocessor. 10
3. Draw the block diagram of 8086 microprocessor and explain the functioning of each block. What is the minimum mode operation of 8086? 20
4. (a) What is the function of the stack? If the current values in the stack segment register and stack pointer are $CO01_{(16)}$ and $FF00_{(16)}$ respectively, what is the address of the current top of the stack? How many words of data are currently held in the stack? 10

- (b) Give an overview of the events in the order they take place during the interrupt request, interrupt acknowledge and interrupt vector fetch cycle of an 8086 microcomputer system. 10
5. What is direct memory access operation? How does the block data transfer takes place with DMA controller? Explain in detail. Use required diagrams to explain the same. 20
6. (a) If ports A, B and C of an 8255A are to be configured for Mode D operation, where ports A and B are inputs and C is an output port, what is the control word? Write an instruction sequence that will load the control word if the control register is at I/O address $1000_{(16)}$? 10
- (b) Draw a connection diagram and explain the interfacing of A to D convertor using 8255 A with the microprocessor. 10
7. Draw the block diagram of 8251, USART and explain the functions of each block. 20
8. Write notes on: <http://www.HaryanaPapers.com>
 - (a) Addressing modes of 8051.
 - (b) Programmable interval time v.
 - (c) Architecture of a microcontroller. 7+7+6