**M.Tech 1st Semester Electrical Power System**
**Examination, December–2017**

**MICROPROCESSORS & MICRO CONTROLLERS**

**Paper-MTEPS-101**

*Time allowed : 3 hours]* *[Maximum marks : 100*

***Note :*** *Attempt any **five** questions out of eight questions.*

1. (a) Explain various addressing modes of 8086, state examples of each mode. 10

   (b) If the current values in the code segment register and the instruction pointer are $0200_{(16)}$ and $01AB_{(16)}$ respectively, what physical address is used in the next instruction fetch ? 10

2. (a) Mention the functions of an assembler and a compiler. 10

   (b) Explain the machine language instruction format in 8086 microprocessor. 10

3. Draw the pin diagram of 8086 microprocessor and explain the functions of each pin. What is the maximum mode of 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 $C000_{(16)}$ and $FF00_{(16)}$ respectively, what is the address of the current top of the stack ? 10

(b) How can the interrupt interface be reenabled during the execution of an 'interrupt service routine' ? 10

5. How does the block data transfer take place between external memory devices and 8086 microprocessor ? Explain the DMA operation in detail. 20

6. (a) What is the contral word in 8255A, if ports A, B and C are to be configured for mode O operation, where A and B parts are inputs and C is an output port ? Write an instruction sequence to load contral register at I/O address $1000_{(16)}$. 10

(b) Draw a connection diagram and explain the interfacing of D to A converter using 8255A with the microprocessor. 10

7. Draw the block diagram of 8279, the display controller and explain the functions of each block. 20

8. Write notes on : 7+7+6

(a) Instruction set of 8051

(b) Programmable internal timer

(c) Timer/Counter operations of a micro controller.