

Roll No .....

Total No. of Questions : 09]

**Paper ID [EC307]**

[Total No. of Pages : 02

(Please fill this Paper ID in OMR Sheet)

**B.Tech. (Semester - 5<sup>th</sup>)**

**MICROPROCESSORS AND ITS APPLICATIONS (EC - 307)**

Time : 03 Hours

Maximum Marks : 60

**Instruction to Candidates:**

- 1) Section - A is **compulsory**.
- 2) Attempt any **Four** questions from Section - B.
- 3) Attempt any **Two** questions from Section - C.

**Section - A**

**Q1)**

**(10 x 2 = 20)**

- a) Give the list of Microprocessor-Initiated operations of 8085.
- b) Write instructions to store the contents of register B(32 H) in the memory location 8000 H using the opcodes :  
MOV, STAX and STA.
- c) What is the difference between CPU working in real mode and protected mode?
- d) Give the block diagram of 8086 memory banks.
- e) How you will use an Interrupt to produce a real time clock in 8086.
- f) Give two examples of logic control instructions in 8086.
- g) Give two examples of branch instructions in 8085.
- h) In what situation nonmaskable interrupt will be generated by 8086?
- i) Why DMA access is faster method than other methods?
- j) What is the necessity of using chips like 8087 along with 8086 microprocessor?

**Section - B**

**(4 x 5 = 20)**

- Q2)** Draw and explain the block diagram showing how a DMA Controller operates in a microcomputer system.

- Q3) Discuss in brief about important five types of interrupts in 8086.
- Q4) Explain in detail about arithmetic and program control instructions of 8086.
- Q5) The memory map of a 4096 byte memory chip begins at the location 2000H. Specify the address of the last location on the chip and the number of pages in the chip considering 8085 microprocessor.
- Q6) Data byte 28H is stored in register B and data byte 97H is stored in the accumulator. Show the contents of registers B, C and accumulator after the execution of the following two instruction considering 8085 microprocessor.
- MOV A, B  
MOV C, A.

### Section - C

(2 x 10 = 20)

- Q7) Give the pin configuration, Draw and explain the expanded block diagram of 8155.
- Q8) (a) List the major components of the 8279 interface and also explain their functions.  
(b) Write initialization instructions for the 8255A to set up :  
Port A as an output port in Mode 0.  
Port B as an output port in Mode 1 for interrupt I/O.  
Port C (Upper) as an output port in Mode 0.
- Q9) (a) Explain how 8086 works in maximum mode.  
(b) Show the 8279 assembly language instructions to  
Write 99H to the first location in the display RAM and auto increment the display RAM pointer.  
Read the first byte from 8279 FIFO RAM.  
Blank the entire display.