

**(OLD COURSE)**QP Code : **4266**

(3 Hours)

[ Total Marks : 100

- N. B. :** (1) Question no. 1 is **compulsory**.  
 (2) Attempt any **four** from the **rest**.  
 (3) Make any suitable assumption wherever required.

1. Answer any **four**. **20**
- (a) Differentiate microcontroller with respect to microprocessor
  - (b) What is minimum and maximum mode of operation of 8086 microprocessor.
  - (c) Explain the function of stack and stack pointer
  - (d) Differentiate Jump and Call instruction
  - (e) Explain bus architecture of any microprocessor based system.
2. (a) explain different addressing modes of instruction with at least two suitable examples for each in 8086 microcontroller **10**
- (b) What is flag register and what is its importance in any microprocessor. **5**
- (c) what is pipelining and how it increases the speed of execution **5**
3. (a) What is subroutine. Explain the instruction related to subroutine **5**
- (b) What is an assembler and assembler directive. Explain with the example of any two assembler directive **5**
- (c) Write short note on memory banking of 8086 microprocessor **10**
4. (a) Write a program to multiply two 8 bits number FA H and 45H stored in consecutive memory locations. Store the result in the consecutive memory locations for 8086 microprocessor **10**
- (b) Draw the functional block diagram of 8086 microcontroller maximum mode configuration and explain the signals that are specific to the maximum mode operation **10**
5. (a) Explain the group of instruction with example in 8051 microcontroller. **10**
- (b) Write short note on memory configuration of 8051 microcontroller. **10**

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6. (a) write a program to generate square wave of time period 1 micro second using 8051 microcontroller. Assume the microcontroller frequency to be 10 M Hz. 10
- (b) Explain the I/O mode of operation of 8255 programmable peripheral interface. 10
7. Write short note on any two 20
- (a) Microprocessor based minimum system
  - (b) DC motor control by microprocessor
  - (c) Methods of time delay generation using microprocessor
  - (d) Traffic light control using microcontroller
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