DEPARTMENT OF ELECTRONICS AND COMMUNICATION
MICROPROCESSORS AND MICROCONTROLLERS

III /II EEE : (Question Bank) : R-16   **2018-2019**

UNIT-1

1. a) Discuss about the memory segmentation in 8086 processor.
[5]
   b) What is the function of Flag register? Describe about the each flag bit
[5]

2 a) List basic features of 80286 microprocessor.   [5]
  b) What is instruction pipelining?   [5]

3. a) Explain 8086 architecture with neat diagram and also explain register organization. [5]
   b). Explain the segmented memory organization structure of 8086 and also discuss the advantages.   [5]

4. a) Describe about the physical memory organization in an 8086 system (or) Discuss about the memory segmentation in 8086 processor.   [5]
   b) List basic features of 80386 microprocessor and discuss.
[5]

5. a) Discuss the features of 80486 microprocessor.   [5]
   b) Specify the size of data, address, memory word and memory capacity of 8086 Microprocessor   [5]

UNIT-II

1. a) Explain the minimum mode operation of 8086 with the help of a PIN diagram   [5]
   b) Write an assemble language program for finding the Largest number in an Array, the length of array is ten 16-bit numbers.   [5]

2. a) Explain any three string manipulation instructions of 8086.   [5]
   b) Write an assemble language program to find the sum of the squares of first ten numbers.
[5]

3. a) Discuss briefly about the addressing modes of 8086 with examples.   [5]

b) Draw the timing diagram for the memory read cycle operation in the minimum mode
   of 8086 processor   [5]

4. a) Define assembler and explain the different assembler directives used in 8086
   microprocessor   [5]
   b) Write a program with a flowchart to multiply two 8-bit numbers.   [5]

5. a) Write an ALP to find the multiplication of two 16-bit Hex numbers?   [5]
   b)   Describe the function of the following pins in 8086 maximum mode of operation

   i) TEST ii) RQ0 $/GT_0$ and RQ1$//GT1_1$ [5]

UNIT-III

1. a) Draw block diagram of 8255 and explain its modes of operation.   [5]
   b) Show the control word format of 8255 and explain how each bit is programmed. [5]

2. a) Draw and Explain the cascaded mode operation of 8259 with a neat block diagram. [5]
   b) Discuss about the operational command words of 8259 and draw its frame format. [5]

3. With a neat diagram, explain the working of 8257 DMA controller.   [5]

4. a) Interfacing of a two 4X4 PROM and two 8X4 RAM with 8086 CPU, draw the
      memory map and interfacing diagram for it, the RAM address follows the ROM
   address..   [5]
   b) Name any two types of A to D converters. Explain any one.   [5]

5. a) What are the registers available in 8257? What are their functions.   [5]
   b) Discuss about the initialization command words of 8259 and their sequence in detail. [5]

UNIT-IV

1. a) Discuss about the addressing modes of 8051 micro controller   [5]
   b) Explain the arithmetic and logic instruction of 8051 microcontroller with example. [5]

2. a) Explain the internal RAM organization of 8051.   [5]
   b) What is the use of SFR? Discuss the structure of the following registers and explain. [5]

      a) PSW
      b) IE
      c) SCON
      d) TMOD
      e) PCON
      f) IP.

3. a) Explain the architecture of 8051 with its diagram.   [5]
   b) Explain the data types and assembler directives of 8051.   [5]

4. a) Explain the organization of memory in 8051 micro controller

b) Explain the structure of Program Status Word register of 8051. [5]

5. a) Explain the modes of operation of Timer unit in 8051 Microcontroller. [5]

b) Write a program based on 8051 instruction set to pack array of unpacked BCD digits.[5]

UNIT-V

1. Write short notes on following
   a) List out the salient futures of PIC controller.   [5]
   b) List out the salient features of PIC Flash controller.   [5]

2. a) List out the interrupts of PIC controller.   [5]
   b) Draw and Explain different timers presented in PIC controller.   [5]

3. a) Draw the internal architecture of PIC controller and explain its operation.   [5]
   b) Draw the flag register of PIC controller and explain the function of each flag in detail. [5]

4. Explain the Power on reset and watch dog timers operation in PIC controller in detail. [5]

5. a) Explain different I/O ports presented in PIC controller and draw the necessary
      diagram for it.   [5]
   b) List different PIC micro controller families.   [5]

UNIT-VI

1. a) Explain the structure of C program   [5]
   b) Explain the components of C program with examples   [5]

2. a) What are the data types in and explain   [5]
   b) Explain the functions in C   [5]

3. a) List and explain various operators in C   [5]
   b) List and explain various control statements in C   [5]

4. a) Explain about pointers in C   [5]
   b) Write a C program to add two numbers   [5]

5. a) Write a C program to access a port to read and write the data   [5]
   b) Write a C program to blink an LED   [5]