Code No: R32024   **R10**   **Set No: 1**

III B.Tech. II Semester Supplementary Examinations, January -2014
MICRO PROCESSORS AND MICRO CONTROLLERS
(Electrical and Electronics Engineering)

Time: 3 Hours   **Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
*****

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

2. a) Explain various addressing modes of 8086 with examples.
   b) Explain the instructions related to arithmetic and logical shift.

3. a) Write a program to implement FOR loop using instructions of 8086.
   b) Write an 8086 Assembler Program that adds two given 4-digit BCD numbers.

4. a) Explain mode-1 and mode-2 operation of 8255.
   b) Interface a typical 12 bit DAC with 8255 and write a program to generate a triangular waveform of period 10ms. The CPU runs at 5MHz clock frequency.

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

6. a) What is the role of pull-up resistors while interfacing push buttons, keyboard with microcontrollers?
   b) Interface Program memory of 16K x8 EPROM to 8051 and give its memory map. The address of memory map should start from 0000H

7. a) What do you mean by the term 'contact debounce'. How is contact debouncing problem taken care of while interfacing keyboard with a microcontroller?
   b) Explain the internal and external program memory as well as data memory with the diagram and their capacities.

8. Write short notes on.
   (a) Interfacing of 8259
   (b) Interfacing of Floppy Disk Controller.
*****

Code No: R32024   **R10**   **Set No: 2**

III B.Tech. II Semester Supplementary Examinations, January -2014
MICRO PROCESSORS AND MICRO CONTROLLERS
(Electrical and Electronics Engineering)

Time: 3 Hours   **Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
*****

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

2. a) Explain the maximum mode operation of 8086 processor with a neat schematic diagram.
    b) Explain the following instructions of 8086 processor.
       i)INTO ii)IDIV iii)TEST iv)RCR v)RET

3. a) Write an ALP to find the multiplication of two 16-bit Hex numbers?
    b) What are assembler directives and micros? Consider one example and show how they are used?

4. a) Discuss the CWR format of 8255 for different modes.
    b) What are the various steps involved in Stepper motor interfacing? Explain.

5. a) Explain functionality and use of Interrupt Controller and command words of 8259.
    b) Explain the functions of following signals of 8257
       (i) HLDA   (ii) AEN   (iii) MARK   (iv) MEMR

6. a) What are the various steps involved in ADC interfacing?
    b) How does the CPU identify between 8-bit and 16-bit operations?

7. a) Draw and explain the interface of 7-segment display with 8051.
    b) Write 8051 procedure to return a key code when a key match is found

8. Write short notes on
    (a) Temperature Transducer
    (b) Interfacing of 8259

*****

Code No: R32024   **R10**   **Set No: 3**

III B.Tech. II Semester Supplementary Examinations, January -2014
MICRO PROCESSORS AND MICRO CONTROLLERS
(Electrical and Electronics Engineering)

Time: 3 Hours   **Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
*****

1. a) Explain different registers used in 8086. What are the registers used to access memory.
   b) What is segmentation? What are its advantages? How is segmentation implemented in typical microprocessors?

2. a) Discuss SBB, AAD, TEST, SCAS instructions of 8086.
   b) Draw the timing diagram for the memory write cycle operation in the minimum mode of 8086 processor.

3. a) Write a program to implement, If -Then -Else construct using 8086 instructions?
   b) What is a MACRO? How do you pass parameters to MACROs?

4. a) Explain the internal architecture of 8255 with a neat block diagram.
   b) Interface ADC 0808 with 8086 using 8255 ports. Use port A of 8255 for transferring digital data output of ADC to the CPU and port C for control signals. Assume that an analog input is present at Input2 of ADC and a clock input of suitable frequency is available for ADC. Draw the schematic and write required ALP.

5. a) Discuss the various operating modes of 8259.
   b) Explain the architecture and operation of 8257 DMA controller with a neat block diagram.

6. Explain 8051 memory organization and addressing modes with examples.

7. a) Explain interrupt structure of 8051.
   b) How 8051 micro controller can be interfaced with external ROM, Explain with examples?

8. Write short notes on
   (a) Temperature Transducer
   (b) Interfacing of 8259

*****

Code No: R32024   **R10**   **Set No: 4**

III B.Tech. II Semester Supplementary Examinations, January -2014
MICRO PROCESSORS AND MICRO CONTROLLERS
(Electrical and Electronics Engineering)

Time: 3 Hours   **Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
*****

1. a) What is the function of Flag register? Describe about the each flag b
   b) What is the significance of BIU in 8086

2. a) Sketch and explain the 8086 bus activities during the read and write machine cycles in minimum mode.
   b) Explain the function of the following instructions of 8086.
      i) IN ii) LAHF iii) LDS iv) XLAT v) XCHG

3. a) What are assembler Directives? Explain 4 assembler directives in detail?
   b) Write an 8086 assembly Language program to convert a BCD Number to a Binary Number.

4. a) Interface an 8255 with 8086 so as to have port A address 00, port B address 02,port C address 01 and CWR address 03.
   b) Explain the various modes of operation of 8255.

5. a) Explain the bit definitions of mode set register for 8257 controller.
   b) Explain the architecture and operation of 8259 programmable interrupt controller with the help of a neat block diagram.

6. What is interrupt and interrupt service routine, explain in contest with 8051.

7. a) With the help of a functional block diagram explain any one application of 8051 microcontroller.
   b) Write 8051 ALP to transmit 'Hello World' to PC at 9600 baud for external crystal frequency of 11.0592MHz

8. Write short notes on.
   (a) Interfacing of 8259
   (b) Interfacing of Floppy Disk Controller.

*****