Code No: V3128 **R07** **Set No: 1**

III B.Tech. I Semester Supplementary Examinations, April/May - 2013
MICRO PROCESSORS AND INTERFACING
(Common to CSE, IT & ECC)

Time: 3 Hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks
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1. a) Discuss the Genral purpose register of 8086? Explain the flag Register of 8086?
   b) Explain the 6-byte Que Process in 8086 Architecture. [8M+8M]

2. a) Write an assembly language program in 8086 to find out the number of even and odd number of 16-bit hexadecimal number.
   b) Write an assembly language program in 8086 to convert BCD to &7- Segment code. [8M+8M]

3. a) Explain the following signals of 8086
   (i) LOCK (ii) TEST (iii) RQ/GT(iv) BHE
   b) Interface two 4kX8 ROM and two 16KX8 RAM chips with 8086.Select suitable memory maps. [8M+8M]

4. a) What is NMI? Explain Interrupt vector table of 8086.
   b) Explain ICW's and OCW's of 8259. [8M+8M]

5. a) Draw and Explain 8251 USART.
   b) Explain TTL to RS232 and RS232 to TTL conversion. [8M+8M]

6. a) Draw and Explain 8255 PIO?
   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 I/P4 of the ADC. Draw the schematic and write required ALP. [8M+8M]

7. a) What is paging and explain how the linear address is converted in to physical address.
   b) Explain RISC Processor. [8M+8M]

8. a) Explain following Registers
   (i) SCON (ii) PCON (iii) IP (iv) PSW [4x4=16M]

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*****

1. a) Explain the different addressing modes of 8086 microprocessor with examples.
   b) Explain the following assembler directives:
   (i) SEGMENT (ii) ORG (iii) ASSUME (iv)DT [8M+8M]

2. a) Write an assembly language program in 8086to add two 16-bit packed BCD number.
   b) Write an assembly language program to display a message "JNTU KAKINADA" on DOS Command. [8M+8M]

3. a) Explain with neat circuit diagram and timing diagram of 8086 operated in minimum mode.
   b) Draw and explain 8257 DMA. [8M+8M]

4. a) Interface DAC AD7532 with an 8086 CPU resuming at 8MHz and write an assembly language program to generate a saw tooth waveform of period with Vmax 5V.
   b) Explain the control word format of 8255 in I/O and BSR mode. [8M+8M]

5. a) Draw the block diagram of 8259 and explain each block.
   b) Distinguish between Master and slave mode operation of 8259. [8M+8M]

6. a) Explain the different modes of data transmission.
   b) Explain the Interfacing of 8251 with 8086 necessary circuit diagram. [8M+8M]

7. a) Explain the salient feature of the 80386 microprocessor.
   b) Draw and explain the internal block diagram of 80286. [8M+8M]

8. a) Explain in detail about serial port operation of 8051 Microcontroller.
   b) Explain salient feature of 8051 Microcontroller. [8M+8M]

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Code No: V3128 **R07** **Set No: 3**

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Time: 3 Hours **Max Marks: 80**

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*****

1. a) Draw and explain the internal block diagram of 8086 microprocessors.
   b) Explain the flag register of 8086 microprocessors. [8M+8M]

2. a) Write an assembly language program in 8086 to perform a one bit BCD addition.
   b) Write an assembly language program in 8086 to convert BCD number in to on equivalent binary number. [8M+8M]

3. a) Explain the function of following signal of 8086
   (i)DT/R (ii)HOLD (iii)MN/MX (iv)READY
   b) What is DMA? Explain the need for DMA. [8M+8M]

4. a) Draw and explain the stepper motor interface to 8086 and write a small program to rotate stepper motor in clockwise and anti clock wise direction.
   b) Explain A/D converter interface to 8086 microprocessors. [8M+8M]

5. a) Explain some important features of 8259 interrupt controller.'
   b) Distinguish between Master and Slave mode operation of 8259. [8M+8M]

6. Design a hardware interfacing circuit for interfacing 8251 with 8086.Set the 8251A in asynchronous mode as a transmitter and receiver with even parity enable,2 stop bits,8-bit character length, frequency 160KHz and baud rate 10K.Write an ALP to transmit 100 bytes of data string starting at location 2000:5000H. [16M]

7. a) Explain real mode and protected mode operation of 80386.
   b) What is meant by paging ?explain its advantages and disadvantages. [8M+8M]

8. a) Explain Interrupt structure of 8051 microcontroller.
   b) Explain Addressing modes of 8051 microcontroller. [8M+8M]

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Time: 3 Hours **Max Marks: 80**

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1. a) Explain Instruction set of 8086 with examples
   b) Define and explain macros. [12M+4M]

2. a) Write an assembly language program in 8086 to convert 2 digit hex number to BCD.
   b) Write an assembly language program to sort given numbers in to ascending order. [8M+8M]

3. a) Design an interface between 8086 cpu and two chips of 16KX8 ROM and two chips of 32KX8 RAM. The RAM address must start 00000Hselect starting address of ROM suitable.
   b) Explain need for DMA. [8M+8M]

4. Draw and explain 8279 keyboard display controller. [16M]

5. a) Explain hardware and software interrupts with examples.
   b) Explain the operating modes of 8259 PIC. [8M+8M]

6. a) Explain the synchronous and asynchronous data transfer methods in 8251USART.
   b) Discuses the data transfer methods. [8M+8M]

7. a) Explain the salient features of Pentium processor.
   b) Differentiate the paging and segmentation. [8M+8M]

8. a) Draw and explain 8051 microcontroller.
   b) Explain format of (i)TMOD (ii)TCON [12M+4M]

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