

Code No: 07A6EC02

R07**Set No. 2**

III B.Tech II Semester Examinations, December 2010
MICRO PROCESSORS AND MICRO CONTROLLERS
Common to Electronics And Control Engineering, Electrical And
Electronics Engineering

Time: 3 hours**Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Draw and discuss the status register of 8257?
 (b) Discuss the priorities of DMA request inputs of 8257? [8+8]
2. (a) Give the format of PCON register in 8051 and explain each bit.
 (b) Explain mode-1 baud rates and serial data mode-2 multiprocessor mode. [8+8]
3. (a) Why does a 16 segment arrangement used to display a character?
 (b) How can we use the incremental shaft angle encoder to measure the motor speed every second. [8+8]
4. (a) Discuss the following addressing modes with suitable examples
 - i. Register indirect
 - ii. Relative based indexed
 - iii. Indexed
 - iv. Register Relative
 (b) Explain the following Instructions of 8086 processor
 - i. LDS/LES
 - ii. XCHG
 - iii. POP
 - iv. DAA. [8+8]
5. (a) Write an 8086 program to perform the addition of two matrices.
 (b) Write a program to arrange a string of numbers in descending order. [10+6]
6. (a) Draw a typical stepper motor interface with 8255
 (b) Design a stepper motor controller and write an ALP to rotate shaft of a 4-phase stepper motor with 200 rotor teeth, for 5 rotations in anti-clockwise direction. [6+10]
7. (a) Discuss the advantages of micro controller based system over micro processor based system.
 (b) Enlist the relevant features of 8051 forming of micro controllers. [10+6]
8. (a) Write an 8086 instruction sequence for transmitting the characters using 8251 on a polled basis.

Code No: 07A6EC02

R07

Set No. 2

- (b) Write an 8086 instruction sequence for receiving 100 characters using 8251 on a polled basis and store them in memory at location 2050H. [8+8]

FIRSTRANKER

Code No: 07A6EC02

R07**Set No. 4**

III B.Tech II Semester Examinations, December 2010
MICRO PROCESSORS AND MICRO CONTROLLERS
Common to Electronics And Control Engineering, Electrical And
Electronics Engineering

Time: 3 hours**Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Explain the basic steps involved in an A/D converter
 (b) Explain the pin Diagram of ADC 0808/0809. [8+8]
2. (a) Explain the concept of segmented memory? What are its advantages?
 (b) Draw the register organisation of 8086 and explain typical applications of each register. [8+8]
3. (a) Draw the circuit diagram to interface the DAC to the microcontroller and explain.
 (b) Give the differences between microprocessors and microcontrollers? [8+8]
4. (a) What is a MACRO? How do you pass parameters to MACROs?
 (b) Write a program to implement FOR loop using instructions of 8086. [8+8]
5. (a) What are the MODEM control lines? Explain the function of each line.
 (b) Discuss how MODEM is controlled using these lines with necessary sequence of steps. [8+8]
6. (a) How does the timer overflow interrupt differ from the real-time clock interrupts? Give four applications of the real-time clocked interrupt.
 (b) Describe the concept of interrupt intervals. [10+6]
7. (a) Explain the cascaded mode operation of 8259 with a neat block diagram
 (b) Write about operational command words of 8259. [10+6]
8. (a) Draw and discuss the internal architecture of 8051
 (b) Discuss the following signal description of 8051.
 i. RXD
 ii. TXD
 iii. \overline{RD} . [10+6]

Code No: 07A6EC02

R07**Set No. 1**

III B.Tech II Semester Examinations, December 2010
MICRO PROCESSORS AND MICRO CONTROLLERS
Common to Electronics And Control Engineering, Electrical And
Electronics Engineering

Time: 3 hours**Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Explain with a neat diagram how push button and LED can be connected to 8051
 (b) Mention any application of electromagnetic relay and explain how a electromagnetic Relay is connected to a 8051 microcontroller with diagram. [8+8]
2. (a) List the instructions that access only the bitwise operands.
 (b) Explain different logical instructions with examples. [8+8]
3. (a) Explain the signal descriptions in 8086.
 (b) What do you mean by pipelined architecture. [10+6]
4. (a) Discuss the following modes of DMA transfer
 - i. Signal transfer
 - ii. Block transfer
 (b) Explain the function of the following signals of 8257
 - i. ADSTB
 - ii. \overline{MENW}
 - iii. TC
 - iv. AEN
 [8+8]
5. (a) Draw the circuit of TTL to RS232 conversion and explain the necessity of this interface.
 (b) Draw necessary circuit to interface 8251 to an 8086 based system with an address A0H. Write the sequence of instructions to initialize 8251 for synchronous transmission with odd parity, single SYNC character, 8 bit data character. [6+10]
6. (a) List the timer features that are programmable.
 (b) List the timer features that are programmable in a timer as a free-running counter. [8+8]
7. (a) Write an ALP that goes on accepting the keyboard entries and display them on line on the CRT display. The control escapes to DOS prompt if enter key is pressed.
 (b) Write a short notes on Linkers. [10+6]

Code No: 07A6EC02

R07

Set No. 1

8. (a) Explain about the programmed I / O.
(b) Explain about the interrupt driven I / O.

[8+8]

FIRSTRANKER

Code No: 07A6EC02

R07**Set No. 3**

III B.Tech II Semester Examinations, December 2010
MICRO PROCESSORS AND MICRO CONTROLLERS
Common to Electronics And Control Engineering, Electrical And
Electronics Engineering

Time: 3 hours**Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Design a 7109 circuit to convert the analog voltage to digital equivalent at a rate of 30 samples per second.
 (b) Explain the control word format of 8255 in I/O and BSR 74373 output parts. [8+8]
2. (a) When do you need the interface circuit for the application of microcontroller?
 (b) How is an array of three segments having 24 LEDs used to display three hexadecimal digits by multiplexing and refreshing. [6+10]
3. (a) How does 8259 A differentiate between 8-bit and 16-bit processor.
 (b) What is the difference between 8259 and 8259A. [8+8]
4. (a) How does 8051 process generate the ISR address on an un-masked interrupt?
 (b) Describe multiple interrupt sources in 8051. What are the sources that have been grouped together. [6+10]
5. (a) Distinguish voltage and current loop and explain the operation of 20mA current loop?
 (b) What is MDS and how it will be used for developing a prototype ? [8+8]
6. (a) Use PUSH instruction to put the number 82H in RAM locations 34H to 37H. Also, write the same program with out PUSH instruction
 (b) Discuss the following instructions
 - i. MOVC A,source
 - ii. MOVX destination,source
 - iii. XCH A,source
 - iv. XCHD A,source
[8+8]
7. (a) Explain the following Instructions of 8086 AAM , ROL, STOS, RET .
 (b) How does the CPU identifies between 8 bit and 16 bit operations. [8+8]
8. (a) Write an ALP to find out ASCII codes of alpha numeric characters from a look up table.
 (b) Write short notes on debugger. [10+6]
