DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
EC 1362 - MICROPROCESSOR AND MICRO CONTROLLER
UNIT I- 8085 MICROPROCESSOR

2 Marks

1. Define microcomputer.
2. What is the function of microprocessor in a system?
3. List the applications of microcomputer.
4. What do you meant by 8-bit and 16-bit processor. Mention some systems in each pe.
5. What is ALE?
6. Explain the function of IO/M in 8085?
7. What is a flag? (APRIL/MAY-04)
8. What are the hardware interrupts of 8085? Give its priority.
9. What are software interrupts?
10. What is assembly language?
11. What is processor cycle (Machine cycle)?
12. What is instruction cycle? (APRIL/MAY-04)
13. What is the need for timing diagram?
14. What is interrupt acknowledge cycle? (APRIL/MAY-05)
15. How many instructions are available in 8085 instruction set?
16. What is addressing?
17. Differentiate immediate addressing and implied addressing.
18. What is the function performed by SIM instruction?
19. What is the function performed by RIM instruction?
20. What is the function of HLT and NOP instruction? (APRIL/MAY-05)
21. What is the need for port?
22. What is an interrupt?
23. Differentiate software interrupt and hardware interrupt.
24. What is vectored and Non-vectored interrupt?
25. What is polling?
26. What are the different types of polling?

16 MARK QUESTIONS

1. Explain the Architecture and pin diagram of 8085 (APRIL/MAY-04)
2. Explain Machine cycles and timing diagrams of 8085 (APRIL/MAY-04)
3. Pin details of 8085 – Explain
4. Draw the timing diagram for seven Machine cycles
5. Indicate the machine cycles and T-states for LXI , LHLD
6. Explain about TIMERS in 8085 with necessary example.
7. Indicate the machine cycles and T-states for MVI A,30H
8. Explain MEMORY INTERFACING of 8085.
9. Explain I/O INTERFACING of 8085
10. Explain INTERRUPTS available in 8085 and its types.

UNIT II -PERIPHERAL INTERFACING OF 8085

2 Marks

1. What are the operating modes of 8255?
2. What are the functions performed by port-C of 8255
3. What is USART?
4. What are the functions performed by INTEL 8251?
5. What are the control words of 8251 and what are its functions?
6. What are the information that can be obtained from the status word of 8251?
7. What is baud rate? (APR/MAY –'05)
8. What are the different types of data transfer scheme?
9. What are the different types of DMA data transfer scheme?
10. What is the need for interrupt controller?
11. List some of the features of INTEL 8259?
12. Write the various functional blocks of INTEL 8259?
13. How 8259 is programmed?
14. What are the features of 8259 that can be programmed using OCW's?
15. What are the different scan modes of 8279?
16. What are the classification of computers according to the size?
17. What are the different programmed data transfer schemes used in microprocessor?
18. State any four special purpose peripherals.
19. What are the two various modes of DMA transfer?
20. What is meant by control word?
21. Mention the components that are necessary to interface keyboard/display using the 8279.
22. What are the functions performed by the keyboard and display interfacing using 8279?
23. What is the maximum number of key codes that can be generated by 8279?
24. What are the programmable display features of 8279?
25. What are the different scan modes of 8279?
26. Name the sections in the block diagram of USART.
27. Explain the function of signal SYNDET/BRKDET in receiver section in a) Asynchronous mode and b) Synchronous mode
28. What are the functions performed by INTEL 8251.
29. What are the control words of 8251A and what are its functions?
30. How are the functions of 8255A classified ?
31. Explain the different types of modes in I/O mode.
32. Explain the functions of control section in programmable peripheral interface (8255A)
33. Mention the steps that are necessary to communicate through 8255A with the peripherals. (APR/MAY –'05)

34. Explain the simple input or output mode (mode 0) of 8255A.
35. Explain the bit set/reset (BSR) mode of 8255A.
36. Explain the function of the output control signals in mode1.
37. What are the signals present in the control section of the programmable interval Timer (8254)
38. Mention the steps that are necessary to initialize a counter.
39. Explain the methods available to read the value of the count in progress.
40. Give the classifications of modes in programmable interval timer.
41. What are the two major segments of programmable keyboard/display interface ?
42. What are the major sections in the block diagram of 8279?
43. Explain the keyboard section of 8279.
44. Write about the scan section and display section of 8279.
45. Explain the MPU interface section of 8279. (APR/MAY –'05)
46. What does the initialization commands of programming the 8279 specify?
47. Mention the components that are necessary to interface keyboard/display using the 8279.
48. What are the functions performed by the keyboard and display interface using 8279? (APR/MAY –'04)
49. What is the maximum number of key codes that can be generated by 8279?
50 What are the programmable display features of 8279? (APR/MAY –'04)
51. What are the different scan modes of 8279?

16 MARK QUESTIONS

1. Interface a ADC chip with 8085 processor through 8255 ports and write an ALP to use BSR mode to START conversion and STATUS CHECK mode to read output data. Explain the complete circuit and programs. Use I/O mapped I/O configuration. (APR/MAY –'04)
2. Describe any typical automatic process control system using 8085. Use necessary block diagram, flow charts, algorithms and programs to explain the whole system operation. (APR/MAY- '04)
3. Describe with MODE 0 and MODE 3 configurations of 8254 timer in detail (APR/MAY- '04)
4. Show the control word format of 8255 and explain how each bit is programmed (APR/MAY- '04)
5. Explain the advantages of using the following chips in micro processor based systems,
   i) USART ii)PIC
   iii) KEYBOARD & DISPLAY CONTROLLER
   (APR/MAY-'04)
6. Describe the DMA interface in detail (NOV/DEC-'04)
7. Explain the mode 0 of 8255 in detail (NOV/DEC-'04)
8. Using model , write a program to communicate between two micro processor using 8255 **(**APR/MAY-'05)
9. Explain the function of 8279 (APR/MAY-'05)
10. Explain the working of 8254 timer and write a program using it to generate a square wave form of period 3msec (APR/MAY-'05)
11. Discuss how 8251 is used for serial communication of data **(**APR/MAY-'05)

UNIT III – 8086 MICROPROCESSOR

2 Marks

1.What are the modes in which 8086 operate ?
2.What is the size of data and address bus in 8086?
3.What is instruction queue ? Explain its advantage.
4.What is pipelining?
5.List the segment registers of 8086.
6.Write the flags of 8086
7.List the bus cycles of 8086
8.What is the need for timing diagram
9.What are the addressing modes available in 8086
10. What is the difference between CALL and JUMP instruction
11. What is the difference between conditional and unconditional branch instruction
12. What is near jump and far jump
13. What is near call and far call
14. Explain the indexed addressing in 8086
15. Explain the register addressing in 8086
16. Explain the difference between direct and indirect addressing mode
17. What are the different types of interrupts?
18. What do you mean by interrupt priorities?
19. What are timers and how are they classified?
20. What are counters?+

16 MARK QUESTIONS

1.Explain the architecture of 8086?
2.Explain the addressing modes of 8086?
3.Explain the interrupt structure of 8086?
4.Explain the instruction set of 8086?
5.Give the features of 8086 in detail?
6.Explain the arithmetic instruction in detail?
7.Explain the logical instruction in detail?
8.Explain the data transfer instruction in detail?
9. Explain the string instruction in detail?
10. Explain the program control transfer instruction in detail?
11. Explain the timers and delays?
12. Explain the assembly language programming?

UNIT IV-8051 MICROCONTROLLERS

2 Marks

1. What is micro controller?
2. Mention any two real time micro controllers.
3. Give any two differences between microprocessor and micro controller.
4. What are the bits used in the program status word of 8031 micro controller?
5. What is the use of PSEN signal used in IC 8031?
6. What are the registers used for timer operations?
7. What is the difference between mode 0 and mode 1 timer operation of IC8031?
8. What is meant by transition activated interrupts?
9. What are the use of MOVC and MOVX instruction?
10. Give any two differences between LCALL and ACALL instruction.
11. List some assembler directives used by the compiler of 8031.
12. What is meant by power down mode?
13. Specify the functions of various ports in 8096.
14. Why the ALU used in 8096 is called as RALU?
15. Give any four features of 8096.
16. What is cross assembler?
17. What is the basic difference between counter and time?
18. What is use of DPTR in 8031 micro controllers?
19. What was the first developed microprocessor?
20. Mention any few 8-bit and 16-bit micro controllers.
21. What are the input units used to generate digital data inputs?
22. What are the three different types of DIP switches?
23. What does thumb switches mean?
24. What is the function of watchdog timer?
25. What is data memory space?
26. What is called down loaded program?
27. What is scratch pad?
28. What is port latch?
29. What are the differences between 8052 and 8051?
30. What is multiplexed address-data bus?
31. What are the two different types of instructions for reading data from I/O ports?
32. What is Baud rate?
33. What is address-object transfer?
34. What is real-time programming?
35. Differences between Microprocessor and Micro controller:

16 MARK QUESTIONS

1. With neat diagram explain the architecture of INTEL 8051/8031 (NOV/DEC 04)
2. Explain the memory organization of 8051 along with their waveforms
3. What are the 16 bit registers available in 8051? Explain each in detail
4. List out various operating modes for serial port in 8051 and explain each in brief
5. Explain various interrupt registers available in 8051 and their priority
6. Discuss in detail about the various types of instructions available in 8051 with Examples
7. Write a program to arrange given set of numbers in ascending order and descending Order
8. Discuss the peripheral interface of 8031(APRIL/MAY 05)
9. List out the features of 8096 micro controller(NOV/DEC 04)
10. Draw the architecture of 8096 and explain with its blocks
11. Write a note on special function registers(SFR) of 8096
12. Explain Serial port modes and I/O ports of 8096
13. In detail explain about Interrupt structure in 8096

UNIT V - 8051 PROGRAMMING & APPLICATIONS

2 Marks

1. What are the basic digital output units used in microcomputer?
2. Why the seven segment LED display is referred as static display? (Nov/Dec-05)
3. Give any two differences between memory mapped and peripheralI/Ointerfacing.
4. What are the interface devices used to connect output port and high power devices?
5. What is the use of sample and HOLD IC?
6. What is aperture time?
7. State some applications of sample and HOLD circuit.
8. What is the disadvantage in keyboard interfacing using ports?
9. What is the advantage in using INTEL 8279 for keyboard and display interfacing?
10. What is a programmable peripheral device?
11. What is synchronous data transfer scheme?
12. What is asynchronous data transfer scheme?
13. What is an interfacing circuit? (Nov/Dec-05)
14. What are the input devices used in single board microcomputer?
15. What are the output devices used in single board microcomputer?
16. How is an input and output device interfaced with 8085 microprocessor?
17. What is a port?
18. What is the need for port?
19. Give some examples of port devices used in 8085 microprocessor based system.
20. Can an input port and output port have the same port address?

21. What are the different methods of interfacing I/O devices to 8085-based system? 22.
22.What are the parts of seven segment LED?
23. Give some applications of seven segments LED
24. What are the two types of 7 segments LED?
25. Explain how the seven segment LEDs are interfaced to 8085 processor.
26. What is a multiplexed display?
27. Give some advantages of multiplexed display?
28. Define memory mapped I/O. .
29. Compare the memory mapped I/O and Standard mapped I/O
30. What is the drawback in memory mapped I/O?
31. What is memory access time? (Apr/May-04)
32. If high-order lines are partially decoded, how can one determine whether it is peripheral I/O or memory mapped I/O?
33. What is the current requirement of each seven segment LED?
34. What is the disadvantage of using the ports and latches for LED display interfacing?
35. When the peripherals and I/O devices are memory mapped in the system?
36. What is a transducer?
37. What are the two types of A/D converters?
38. What is the difference between the continuous balance A/D converter and Successive approximation A/D converter?
39. What is the basic principle behind a D/A converter?
40. What is the principle behind A/D converter?
41. How is input given to speech recognition circuit?
42. What is resolution in DAC? (Apr/May-04)
43. What are the internal devices of a typical DAC?
44. What is settling or conversion time in DAC?
45. What is resolution and conversion time in ADC?

16 MARK QUESTION

1. With neat diagram explain the ADC interface to micro processor (Nov/Dec-o4)
2. Explain the seven segment LED interface with micro processor (Nov/Dec-05)
3. Draw and explain the operation of a sample and hold circuit (Apr/May-04)
4. Compare memory mapped I/O with I/O mapped I/O (Apr/May-04)
5. Design an interface and write a program to connect a thumb wheel switch & a seven segment LED (Apr/May-05)
6. Using peripheral mapped I/O , design an interface circuit to connect an ADC 0800 to a microprocessor (Apr/May-05)
7. With suitable example explain how I/O devices are connected using memory mapped I/O & peripheral I/O (Apr/May-05)
8. Explain thumb wheel switch
9. Explain interfacing DIP switches with 74LS244 tri state buffer
10. Explain pressure sensor
11. Explain Industrial process control system
12. Explain LCD displays interface