Important Question of Microprocessor

1. Explain timer delay using NOP instruction and counters.
2. Calculate the count to obtain a 100µs loop delay and express the values in hex. Assume clock frequency of the system is 2MHz.

Mnemonics	T-States
MVI B, Count	7
Loop : NOP	4
NOP	4
DCR B	4
JNZ : Loop	10/7

3. Explain ASCII to binary code conversion technique and write 8085 assembly language program for the same.
4. Explain binary to BCD code conversion techniques and write 8085 assembly language program for the same.
5. Explain why a latch is used as an output port.
6. Explain I/O Interfacing techniques in 8085.
7. In a certain microprocessor based system 8085 has to be used to utilize its maximum hardware and software capabilities. What I/O addressing scheme would you suggest for 8085? Justify your answer.
8. What is the maximum number of input devices that can be connected to 8085 in memory mapped I/O ?
9. Explain the interfacing of input devices with all diagrams.
10. Give comparison between memory mapped I/O and I/O mapped I/O.
11. Write a short note on serial I/O supported by 8085.
12. Write an 8085 assembly language program to transfer an 8-bit data serially, through SOD line.
13. Explain memory structure and its requirement.
14. Calculate number of memory chip needed to design 8 Kbyte memory if the memory chip size is 1024*2.
15. What is meant by the vectored and non-vectored interrupts?
16. Write instruction to enable all vectored interrupts of 8085.
17. Explain how 8085 responds to INTR interrupt.
18. List out all the vectored interrupts of 8085 and give their vector addresses.
19. Explain the interrupts structure and operations use in 8085 briefly.
20. Draw internal architecture of 8086 and explain each component. What do you mean by pipelining?
21. Discuss the register organization of 8086 microprocessor and explain the function of each register.
22. Draw the register organization of 8086 and explain memory segmentation.
23. Explain minimum mode and maximum mode of 8086.
24. Draw and explain the read write cycle timing diagram of 8086 in minimum mode and maximum mode.
25. What are assembler directives? Give an example.
26. Explain any 8 assembler directives of 8086 microprocessor.
27. Explain assembler, linker, loader and debugger.
28. Describe recursive and re-entrant procedure.
29. Give complete diagram of 8255.
30. With a neat diagram, discuss the various modes of operation of 8255.
31. What are the features of 8255.
32. Explain the internal architecture of 8255.
33. Write a program to sort given 10 numbers from memory location 3010H in the descending order.
34. How an ASCII hex number is converted into its binary equivalent? Give flowchart and subroutine for it.

35. Discuss in detail about the operations of timer 8253 along with the various modes.
36. Explain how the 8254 can be used as a square wave generator.
37. Define DMA. List the sequence of operations carried out during a DMA transfer.
38. Discuss the internal block diagram of 8237A.
39. Explain the data transfer types supported by 8237A.
40. How does 8254 differs from 8253.
41. Draw and explain internal block diagram of 8254.
42. Write a program to generate a square wave of 1 KHz frequency on OUT 1 pin of 8253/54. Assume CLK1 frequency is 1MHz and address for control register = 0BH, counter1 = 09H and counter2 = 0AH.
43. Write a program to initialize counter2 in mode 0 with a count of C030H. Assume address for control register = 0BH, counter1 = 09H, counter2 = 0AH.
44. List the features of 8259H.
45. Draw and explain the internal block diagram of 8259 PIC.
46. Explain the operating modes of 8259.
47. Explain the different priority modes of 8259.
48. How does 8259 identify its own status as master or slave? How does it identify its own number while on job?
49. Explain with the help of a diagram, how an 8259A can be interfaced with the 8086 microprocessor system in minimum mode.