UNIT-5

Q1. Explain with a neat diagram the working of 8251PCI.
Q2. What are the important features of 8251?
Q3. Explain about Mode control word, command word of 8251 with suitable examples.
Q4. Discuss the types of serial communications.
Q5. Give the overview of RS-232c serial data standard.
Q6. Give the status register of 8251 and explain each bit.
Q7. Write the instruction sequence in 8086 to initialise the 8251.
Q8. Draw the internal block diagram of 8251 and explain each block in detail.
Q9. Distinguish between synchronous and asynchronous data formats.
Q10. Explain the line driver and the line receiver circuits of serial communication.
Q11. Draw the asynchronous & synchronous transmission formats, discuss the differences.
Q12. Explain the interfacing of 8251 with 8086 with necessary circuit diagram.
Q13. What do you mean by i/o mapped i/o ? Draw the interfacing of 8251 with 8086 in i/o mapped i/o mode.
Q14. Define the term MODEM. Explain why a modem is required to send digital data over standard switched phone lines.
Q15. Show the bit pattern for the mode word and the command word that must be sent to an 8251 to initialise the device as follows: Baud rate factor of 64, 7-bits per character, even parity, 1 stop bit, transmitter interrupt enabled, DTR and RTS asserted, Error flags reset, no hunt mode, no break character.
Q17. Explain about line driver and line receiver used in serial communication?
Q18. Draw the i/f circuits for data conversion from i) TTL to RS-232c, ii) RS-232c to TTL.
Q19. Write an 8086 program for transmitting 50 characters which are stored from the location 2010H using 8251.
Q20. Write an 8086 instruction sequence for receiving 50 characters using 8251 and store them in memory at location 2080H.
Q21. Draw the communication i/f diagram of USART 8251 and explain various signals.

UNIT-6&7

Q1. Describe the register structure of 8051.
Q2. Explain how 8051 differentiates between external and internal program memory.
Q3. Write the features of RISC processors.
Q4. Discuss about various addressing modes of 8051.
Q5. Discuss in detail about serial port operation in 8051 microcontroller.
Q6. Explain in detail about the interrupt structure of 8051.
Q7. What is the purpose of SP in 8051 and explain the stack operation with example.
Q8. Discuss about various addressing modes of 8051.
Q9. Explain the interrupt structure of 8051.
Q10. Explain the internal and external program memory as well as data memory of 8051 with the diagram showing their capacities.
Q11. An 8051 system requires external memory of four 8K bytes of SRAM each and two chips of EPROM of size 4Kbytes. The EPROM starts at address 1000H, SRAM address map follows EPROM map. Give the complete memory interface.
Q12. Enlist the salient features of 8051 MCU.

Q13. Draw the architectural diagram of 8051 microcontroller and explain in detail about each block.

Q14. Explain with waveforms, the different modes of counter/timer in 8051.

Q15. Discuss in detail about parallel I/O ports in 8051 microcontroller. Also explain how these ports are accessible for specific applications.

Q16. Explain the basic differences between a microprocessor and a microcontroller.

Q17. Discuss about various modes of timer operations in 8051.

Q18. Interface data memory of 16KX8 SRAM to 8051 and give memory map. The starting address of SRAM should be 0000H.

Q19. Draw and discuss the formats and bit definitions of TCON, TMOD registers in 8051.

Q20. Explain the automatic functions of P0, P2 and P3.

Q21. With a block diagram, explain the operation of serial port in 8051.

Q22. Explain about different registers used for the operation of serial port in 8051.