

Question Bank (G scheme)

Name of subject: Microcontroller (MIC)

Subject code: 17534

Unit Test : II

Semester: V

Course : (EJ, IS, IE)

CHAPTER-4: Parallel Ports and Serial Communication (16 Marks)

3 marks

- 1) Explain SBUF register of 8051.
- 2) Describe the baud rate in UART 8051. On which factors it depends.

4 marks

- 3) Explain the ports of 8051 microcontroller.
- 4) Explain the operating modes of serial port of IC 8051 microcontroller.
- 5) Draw & explain PCON register format of 8051.
- 6) Draw the format of SCON register & explain the function of each bit.
- 7) Write a program for serial port of 8051 to transfer letter "A" serially at 4800 baud rate continuously.
- 8) Write a program for serial port of 8051 to receive data serially & put them in P1, set baud rate at 4800, 8 bit data & one stop bit

CHAPTER 5: MCS 51 Interrupt and timers (16 Marks)

3 marks

- 9) Explain internal & external interrupts & their vector address of 8051 & explain the functions of IP register.
- 10) Describe the interrupts used in 8051. Give their priorities & address.

4 marks

- 11) Draw the format of TMOD register & state the functions of each bit.
- 12) Draw the format of TCON register & state the functions of each bit.
- 13). State the type of interrupts provided in 8051 & draw the format of IE SFR.
- 14) Explain the timer's mode of 8051 microcontroller.
- 15) Write a program to generate continuous square wave of 2 KHz on pin P1.4 using mode 1 of timer 0. Given crystal frequency is 11.0592 MHz
- 16) Write a program to generate continuous square wave of 2 KHz on P1.0 & 5 KHz on P2.0 using. MODE 2 of Timer 0 & Timer 1 respectively. The XTAL frequency is 11.0592MHz.

17) Write a program to generate continuous square wave on pin P1.5 continuously using timer 0 & mode 1 for a time delay generated by count value 7634 in timer register. Find frequency of the square wave if XTAL is 11.0592 MHz

CHAPTER 6:Memory and I/O interfacing (18Marks)

3 marks

- 18) Draw the block diagram of 8255.
- 19) List the operating modes of 8255 explain one in detail.

4 marks

- 20) Compare between linear & absolute decoding techniques.
- 21) Draw the diagram to interface 8K X 8 external Program ROM with 8051. Describe in brief the pin used also draw the address map table.
- 22) Draw the diagram to interface 8K X 8 external Data ROM with 8051. Describe in brief the pin used also draw the address map table.
- 23) Draw the diagram to interface 8K X 8 external Data RAM with 8051. Describe in brief the pin used also draw the address map table.
- 24) Draw the control word format of 8255.
 - a) I/O mode
 - b) BSR mode
- 25) Draw & explain the interfacing of stepper motor with 8052 & write a program to rotate in clockwise direction. Assume step angle "1.8".
- 26) A LED is connected to Port C Lower pin (P_{c0}), so write an ALP to turn on LED ON/OFF when a push button switch connected to PA_0 is pressed.
- 27) Write an ALP to turn on LED ON/OFF when it is interface with 8051.
- 28) Draw & explain the interfacing 7 segment display with 8051 microcontroller port & write a program.
- 29) Draw & explain the interfacing 7 segment display with 8051 microcontroller using 8255 & write a program.
- 30) Draw & explain the interfacing of keys with 8051 using port & write a program.
- 31) Draw & explain the interfacing of relays with 8051 using port & write a program.