



**Module-4**

- 7 a. Write a program to retrieve the data serially and put them in P1. Set the baud rate at 4800, 8-bit data and one stop bit. (06 Marks)
- b. Write an 8051C program to transfer the message "INDIA" serially at 9600 baud rate, 8 bit data and one stop bit, continuously. (06 Marks)
- c. Explain the importance of TI and RI flags. (04 Marks)

**OR**

- 8 a. What is an interrupt? List the various interrupts of the 8051 with their corresponding vector address. (06 Marks)
- b. Write a program that continuously gets 8-bit data from 'P0' and sends it to 'P1' where simultaneously creating a square wave of 200  $\mu$ s period on pin P2.1. Use timer '0' to create square wave. Assume KTA1 = 11.0952 MHz. (07 Marks)
- c. Explain simplex, half duplex and full duplex serial data transfer. (03 Marks)

**Module-5**

- 9 a. A switch is connected to pin P2.7. Write a 'C' program to monitor the status of 'SW' and perform the following:  
 i) If SW = 0 : the stepper motor moves clock wise.  
 ii) If SW = 1 : the stepper motor moves counter clock wise. (10 Marks)
- b. Explain the control word format of 8255. (06 Marks)

**OR**

- 10 a. Explain the various modes of 8255 and find the control word for following configurations:  
 i) All ports of A, B and C are O/P ports (mode '0')  
 ii) PA = IN, PB = OUT, PCL = OUT and PCH = OUT. (08 Marks)
- b. Explain the steps to interface ADC 0808 to the 8051 microcontroller. (08 Marks)

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