

Exam.Code:0929
Sub. Code: 6355

1078
B.E. (Electronics and Communication Engineering)
Fifth Semester
EC-507: Microcontrollers and Interfacing

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

- I. Attempt the following:-
- Write the addressing mode of MOV A,@R0.
 - What are the contents of IE register upon reset, and what do these values mean?
 - In what way LCALL instruction is different from ACALL instruction?
 - Which port of 8051 does not have any alternate function and can be used solely for I/O?
 - What is the function of PSEN pin of 8051?
 - True or False. A 10-bit ADC has 10-bit digital output.
 - What is the advantage of Register Indirect Addressing Mode?
 - Name all the PIC18 Reset control signals?
 - What is Watchdog Timer?
 - Which register enables the interrupt priority in PIC 18? (10x1)

UNIT - I

- II. a) Draw and explain pin configuration of 8051 microcontrollers.
b) Explain the following instructions with an example:-
i) RETI
ii) MOVC A,@A+DPTR
iii) MOV DPTR, #data
iv) JMP@A+DPTR
v) CJNE A,#DATA, LOOP1 (5,5)
- III. a) Write a program using interrupts to get data serially and send it to P2 while timer 0 is turning the LED connected to P1.6 on and off every second.
b) What is the function of MAX 232 chip? Show and explain its connections with 8051. (5,5)

P.T.O.

(2)

- IV. a) How interrupts are prioritized in 8051 microcontroller? Explain?
b) Write a program to serially transfer the ASCII letter B continuously at a 19200 baud rate. Use the timer 1 in mode 2. (5,5)

UNIT – II

- V. a) Explain following instructions of PIC18 with suitable example.
i) LFSR
ii) RETFIE
iii) CPFSLT
iv) NEG f, a
v) TBLWT^{*,+}
b) How are stacks accessed in PIC18? What is the role of stack in CALL instruction? Explain. (5,5)
- VI. a) Assuming that XTAL=11.0592 MHz and that we are generating a square wave on P1.3, find the highest square wave frequency that we can generate using mode 2.
b) Write a program for exchanging the nibbles in the absence of a SWAP instruction. (5,5)
- VII. a) Explain the steps used for writing and reading data to an SPI device.
b) Explain the Macros with example in detail. (5,5)

x-x-x