

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII • EXAMINATION – SUMMER • 2014****Subject Code: 172001****Date: 22-05-2014****Subject Name: Microcontrollers and Embedded Systems****Time: 02:30 pm - 05:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain the bit configuration of SCON & TCON registers of 8051 **07**
(b) Draw and explain memory organization in PIC18f. **07**
- Q.2** (a) Interface 7segment LEDs with PIC18f. **07**
(b) Interface 3x3 keyboard with 8051. **07**
- OR**
- (b) Interface DAC0808 with 8051. **07**
- Q.3** (a) Explain the types of interrupts in 8051 and state their priority. Explain IE register bit pattern. **07**
(b) Explain the significance of stack using PUSH & POP instructions. **07**
- OR**
- Q.3** (a) What is Checksum byte? Why is checksum operation done? Write a program to calculate checksum byte. **07**
(b) Explain PORTA & PORTB functions of PIC18f452. **07**
- Q.4** (a) Explain data framing in 8051. What is baud rate? How do you set different baud rates & double the baud rate in 8051? **07**
(b) Write a 8051 C program to toggle P2.5 every 5ms. XTAL=24MHz. **07**
- OR**
- Q.4** (a) Explain the different branch instructions in PIC18f. **07**
(b) Write a 8051 C program to transmit the message "PEACE" at 19200 baud rate serially. **07**
- Q.5** (a) Write an ALP to add an array of 5 data starting at 40H & store the result in locations 07H & 08H in PIC18f. **07**
(b) Write a 8051 C program using interrupts to (i)generate 10kHz on P2.3 **07**
(ii)receive data serially (iii)read data from P0, compliment it & send to P1. XTAL=11.0592MHz.
- OR**
- Q.5** (a) Write a subroutine to setup Timer1 of PIC18F in 16-bit mode with internal clock at 10MHz to generate a delay of 100ms. **07**
(b) Write an ALP to clear 16 RAM locations starting at address 50H in PIC18f. **07**
