

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V- EXAMINATION – SUMMER 2016****Subject Code: 151001****Date: 19/05/2016****Subject Name: Microcontroller and Interfacing****Time: 02:30 PM to 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) Draw and explain 8051 block diagram. **07**
(b) Draw and explain PSW of 8051 microcontroller. Also explain RAM allocation in 8051. **07**
- Q.2** (a) Explain multipurpose utility of different ports in 8051 **07**
(b) Write difference between ACALL and LCALL instruction with example. **07**
- OR**
- (b) State different addressing modes in 8051 microcontroller. Explain each with example. **07**
- Q.3** (a) Explain Following instruction with example. **07**
a. JBC b. CJNE
(b) 10 hex numbers are stored in memory location starting from address 350H. WAP to convert this HEX number into equivalent decimal number and store them to the address starting from 450H. **07**
- OR**
- Q.3** (a) Explain RS 232 connector and respective handshaking signal **07**
(b) 10 bytes are stored in memory location starting from address 350H. WAP to count the number of even, odd and zero number. **07**
- Q.4** (a) Draw and explain TMOD and TCON register of Timers in 8051 microcontroller. **07**
(b) 16X2 LCD is connected to 8051 microcontroller. Write assembly language program to display “Hello World” on LCD. **07**
- OR**
- Q.4** (a) What is relay? Explain different types of relays. **07**
(b) Draw and explain DC motor control with optoisolater and PWM. **07**
- Q.5** (a) What is the difference between interrupt and polling? Draw and explain interrupt vector table. **07**
(b) Write down steps to program the ADC 0808. **07**
- OR**
- Q.5** (a) Explain different terminology associated with semiconductor memory. **07**
(b) Draw and explain interfacing of RTC with 8051 microcontroller. **07**
