Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI (OLD) - EXAMINATION - SUMMER 2017

Subject Code: 162402 Date: 08/05/2017 **Subject Name: Microcontrollers for Power Electronics** Time: 10:30 AM to 01:00 PM **Total Marks: 70 Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. (a) Draw the internal block diagram of 8051 microcontroller and state the main 0.1 07 features of 8051 microcontroller. **(b)** Explain I/O ports of 8051 and explain their functions. 07 0.2 (a) Compare microcontrollers with microprocessor. 07 Discuss PSW (Program Status Word) register in details. **07** OR **(b)** Discuss DPTR register in details. 07 (a) Explain 8051 timer with related SFRs and one of its operating modes. 07 Q.3**(b)** Write an assembly language program to continuously blink alternate LEDs 07 connected to PORT1. OR What is the stack? Explain PUSH and POP instructions with suitable example. 07 0.3 (a) Write an assembly language program to content of RAM location 50H to 5Fh 07 **(b)** are added together and sum is saved in RAM location 70H and 71H. 0.4 What is an interrupt? Explain priority of interrupts. 07 (a) Write an assembly language program to generate square wave of 50% duty 07 cycle (with equal portion of high and low) on port P1.5 bit use timer 0 to generate time delay. OR Explain assembler directives. **07 Q.4** (a) What is a subroutine? Explain with suitable examples. **(b) 07** Q.5 (a) Explain serial communication modes. 07 Draw and explain a flow chart to detect and identify key activation in 8051. 07 **(b) Q.5** Explain 8051 microcontroller interface with LCD. **07** (a) Write short notes on RS-232C. **(b) 07**
