

GUJARAT TECHNOLOGICAL UNIVERSITY**B. E. - SEMESTER – VII • EXAMINATION – WINTER 2012****Subject code: 173203****Date: 31/12/2012****Subject Name: Microprocessor and Microcontroller****Time: 10.30 am - 01.00 pm****Total Marks: 70****Instructions:**

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

- Q.1 (a) Draw and explain the architecture of 8085 Microprocessor. [07]
(b) Explain the Addressing Modes of 8051 Microcontroller. [07]

- Q.2 (a) Explain basic architecture of AT89c51 microcontroller chip. Discuss RAM structure. [07]
(b) Explain the CALL and JUMP instructions of 8051 Microcontroller. [07]

OR

- (b) Some of the pins of 8085 are listed below. For each pin show whether it is an input line or output line and mentions its function. [07]
1. ALE 2. HOLD 3. READY 4. TRAP 5. INTR

- Q.3 (a) Draw and explain in brief the pin diagram of 8051 microcontroller. Also explain flag bits and PSW register of 8051. [07]
(b) Explain demultiplexing Address and Data Bus in 8085 microprocessor. [07]

OR

- Q.3 (a) Explain Register Bank and Stack of 8051 microcontroller. [07]
(b) Explain control signal generation in 8085 microprocessor. [07]

- Q.4 (a) What is Serial Communication? How it will perform using 8051/52 Controller with PC? Explain it with program and diagram. [07]
(b) Explain the difference between polling and interrupts and also explain the various Interrupts of the 8051. [07]

OR

- Q.4 (a) What is interfacing? Explain Keyboard OR LCD interfacing with 8051 microcontroller. [07]
Q.4 (b) Explain TMOD and explain any one mode of timer for 8051. [07]

- Q.5 (a) W.A.P to add block of 8-bit data. Length of the block is given at memory location 30h and block itself start from memory location 31h. Store the answer at end of the block. Assume answer is 16 bit. [07]
(b) Assuming that ROM space starting at 350H contains "WEL COME", Write a program to transfer the bytes into RAM location at 50H. [07]

OR

- Q.5 (a) Write program to move block of 8-bit data from memory location 30h to memory location 40h. Length of block is 05h. [07]
(b) Write a program to generate 5 KHz square wave with 60% duty cycle at pin P0.0 of 8051 controller. Use mode 1 of timer 1. Crystal frequency = 11.0592 MHz. [07]
