

Seat No.: _____
No. _____

Enrolment

GUJARAT TECHNOLOGICAL UNIVERSITY

Diploma Engineering - SEMESTER-V • Examination – WINTER • 2014

Subject Code: 3351705

Date: 04-12-2014

Subject Name: Microprocessor and Microcontroller in Instrumentation

Time: 10:30 am - 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.
4. English version is considered to be Authentic.

- Q.1** Answer any seven out of ten. **14**
1. List 16 bit register of 8051 microcontroller.
 2. State any four SFRs of 8051 microcontroller.
 3. Draw structure of PSW of 8051 microcontroller..
 4. List addressing mode of 8051 microcontroller.
 5. List any four arithmetic instruction of 8051 microcontroller..
 6. List types of call with their range.
 7. List timer modes of 8051 microcontroller.
 8. List any four logical instruction of 8051 List timer modes of 8051 μ C
 9. Explain MUL AB.
 10. Draw structure of TMOD register.
- Q.2** (a) Draw oscillator clock circuit of 8051 μ C. **03**
- OR
- (a) Draw reset circuit of 8051 μ C. **03**
- (b) List modes of serial communication .Also state advantage of serial communication. **03**
- OR
- (b) Draw internal ROM organization of 8051 μ C. **03**
- (c) Draw block diagram of 8051 μ C. **04**
- OR
- (c) Explain function of each block of 8051 μ C. **04**
- (d) Explain addressing mode of 8051 μ C with example. **04**
- OR
- (d) Draw block diagram of 8085 microprocessor. **04**
- Q.3** (a) Explain analog output device for damper & hopper control. **03**
- OR
- (a) Draw 4 X 4 hex key board interfacing with 8051 μ C. **03**
- (b) Draw pin configuration of port-1 of 8051 μ C. **03**
- OR
- (b) Draw pin configuration of port-2 of 8051 μ C. **03**

- (c) Write assembly language program to add two 8 bit number 72H & 35H ,Store result at location 2000H. **04**
- OR
- (c) Explain instruction (1) movx a,@dptr (2) xchd a,@R0 **04**
- (d) List interrupt of 8051 μ C with their vector address. **04**
- OR
- (d) Draw structure of interrupt priority register (IP) & explain default priority. **04**
- Q.4** (a) Draw timer counter control logic. **03**
- OR
- (a) What is stack? Explain stack operation. **03**
- (b) Explain any two timer modes. **04**
- OR
- (b) Explain application of 8051 μ C for level detector. **04**
- (c) Draw internal RAM organization of 8051 μ C and explain in brief. **07**
- Q.5** (a) Compare microprocessor with microcontroller. **04**
- (b) Explain interfacing of stepper motor with 8051 μ C. **04**
- (c) Draw interfacing of LCD with 8051 μ C. **03**
- (d) Draw interfacing of ADC 0804 with 8051 μ C. **03**
