

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – II • EXAMINATION – WINTER • 2014

Subject code: 1720107

Date: 05-12-2014

Subject Name: Embedded System

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) Discuss microcontroller and ccdpp/fixed point dct **07**
(b) Design a cold drink machine controller , given that a cold drink costs 35/- Rs. **07**
Machine accepts quarters only.. Draw a block box view, come up with a state diagram and state table, minimize the logic and draw the circuit.
- Q.2** (a) Draw and explain functional block diagram of 8051 microcontroller. **07**
(b) Given 1×10^5 Hz crystal controlled oscillator and 64 bit and any number of 16 bit terminal count timers, design a real-time clock that outputs the date and time down to milliseconds. **07**
- OR**
- (b) Explain in detail 8051 register banks and stack **07**
- Q.3** (a) Write a code to generate a ramp using the DAC (DAC0800) **07**
(b) List and Explain disadvantage of Multilevel Bus Architectures **07**
- OR**
- Q.3** (a) Attempt following: **07**
(i) What are the functional requirements of embedded system?
(ii) Give some examples for sophisticated embedded systems.
(b) Explain Arbitration using daisy-chain configuration in detail. **07**
- Q.4** (a) Write a C program to count in BCD from 00 to 99.(use the 2 digit BCD decoded 7 segment display as the output. **12**
(b) List difference between DIP switch and PORT **02**
- OR**
- Q.4** (a) Explain working of all important functional unit of Keypad Controllers **07**
(b) What is the need for IDE in an Embedded Architecture? **07**
- Q.5** (a) Write a C program to switching ON and OFF individual LEDs with software delay. Use the eight independent LEDs. **12**
(b) What are the forms of timer? **02**
- OR**
- Q.5** (a) Explain in detail about UART single purpose processor as an FSMD **07**
(b) List the hardware units that must be present in the embedded systems. **07**
