

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – I • EXAMINATION – WINTER 2012****Subject code: 715203****Date: 10-01-2013****Subject Name: Embedded Systems Software Design****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) What is an Embedded System? Explain with examples. **07**
(b) What are the different components of an Embedded System? Explain with a block diagram. **07**

- Q.2** (a) Tabulate and describe the differences between a microprocessor and microcontroller. **07**
(b) What are the different types of ADC's? Explain any one type with a circuit diagram and timing diagram? **07**

OR

- (b) Explain operation of R-2R ladder DAC with a circuit diagram and timing diagram? **07**

- Q.3** (a) Why C language is considered the most preferred language for programming Embedded systems? **07**
(b) What is Embedded C? Explain how an Embedded C program is different from a regular C program? **07**

OR

- Q.3** (a) What is a cross compiler? Why is this important in Embedded systems programming? **07**
(b) What is Simulation of Embedded Systems? What are its advantages? **07**

- Q.4** (a) Compare and contrast RISC Vs. CISC architectures? **07**
(b) What are the different addressing modes in 8051? Explain with examples? **07**

OR

- Q.4** (a) What are I/O devices? Give examples of Input devices, output devices and I/O devices. **07**

- Q.4** (b) How does a PUSH and POP instruction affect the stack pointer? **07**

- Q.5** (a) What is hand-off in a cellular network? Explain with a block diagram. **07**
(b) What are the key components of a Mobile phone? Explain with a block diagram? **07**

OR

- Q.5** (a) List the different application areas where Embedded systems are widely used. **07**
(b) What is the importance of sensor in Embedded systems? **07**
