

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

# GUJARAT TECHNOLOGICAL UNIVERSITY

M.E –II<sup>st</sup> SEMESTER–EXAMINATION – JULY- 2012

**Subject code: 1710409**

**Date: 17/07/2012**

**Subject Name: Embedded System Design**

**Time: 10:30 am – 13:00 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) Explain in detail USB Serial Communication Protocol with necessary diagrams **07**  
(b) Explain interfacing of DAC with Microcontroller for driving any analog device **07**
- Q.2** (a) Briefly explain difference between various C Program Elements like stack, queue and list. **07**  
(b) Write Short note on Embedded Memories **07**
- OR**
- (b) Explain need and use of Threading for real time systems **07**
- Q.3** (a) Compare various operating systems used for embedded systems **07**  
(b) How to interface one input and output device with microcontroller? Explain with an example. **07**
- OR**
- Q.3** (a) Discuss various embedded system design aspects in brief **07**  
(b) Enlist and discuss any two software aspects of embedded system in detail **07**
- Q.4** (a) Explain importance of signal conditioning in embedded system for peripheral interfacing **07**  
(b) “Multitasking is essential in Real Time systems” – Justify this sentence with your arguments **07**
- OR**
- Q.4** (a) Explain any one Real Time Task Scheduling Technique in detail **07**  
**Q.4** (b) Write Short note on MODEM **07**
- Q.5** (a) Explain UART Interfacing in detail **07**  
(b) Discuss Digital Camera as case study of embedded applications **07**
- OR**
- Q.5** (a) Explain Role of I2C Bus in embedded system **07**  
(b) Explain Adapting Cruise Control System in Car as case study of embedded applications **07**

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