

**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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