

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. Sem. – IInd - Examination – June/July- 2011****Subject code: 1720107****Subject Name: Embedded Systems****Date: 29/06/2011****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.

- Q.1** (a) Explain Analog to Digital Converter with Successive Approximation 07
(b) Draw neat diagram of 8051 microcontroller and explain various blocks 07

- Q.2** (a) List Embedded Systems design metrics parameters and explain them 07
(b) Explain role of Assemblers, Compilers and Linkers in IDE and write a sample code of finding volume of sphere in assembly language. 07

OR

- (b) Write short note on cache memory and explain its significance in embedded systems 07

- Q.3** (a) Describe method of I/O addressing 07
(b) Explain direct memory access and its importance 07

OR

- Q.3** (a) Write note on digital camera and enumerate its specifications. 07
(b) Draw necessary diagram and explain LCD controllers 07

- Q.4** (a) Explain 8051 register banks and stacks 07
(b) Describe with necessary diagram how memory write and read function is operated. 07

OR

- Q.4** (a) Describe in detail multilevel bus architecture. 07
(b) Compare serial protocols and parallel protocols 07

- Q.5** (a) List Serial Protocols and explain any three of them 07
(b) Justify the statement “Selection of microcontroller is very important based on the application” 07

OR

- Q.5** (a) Describe watch dog timers and counters 07
(b) What is PWM? Explain how to control a DC motor with a PWM. Can we use stepper motor controller for this? 07
