## **GUJARAT TECHNOLOGICAL UNIVERSITY**

## B. E. - SEMESTER - VII • EXAMINATION - WINTER 2012

Subje	Subject code: 171005 Date: 28/12/2		
Subje	ect Na	ame: Embedded Systems (Department Elective - I)	
Time	Time: 10.30 am - 01.00 pm Total Marks		
Instr	uctio	ons:	
	2. M	ttempt any five questions. Iake suitable assumptions wherever necessary. igures to the right indicate full marks.	
Q.1	(a)	Do as directed.  (i) Compare microprocessor, microcontroller, DSP and ASSP.  (ii) What do you mean by charge pump? How does a charge pump supply power in an embedded system without using power-supply lines?	08
	<b>(b)</b>	11 4	06
Q.2	(a)	Discuss the ARM programmer's model in detail.	06
-	<b>(b)</b>	Explain the following ARM instructions with an example.  (i) ADDEQ (ii) BNE (iii) LDRB (iv) SMULL  OR	08
	<b>(b)</b>	Explain the following ARM instructions with an example.  (i) SUBS (ii) SWI (iii) CMN (iv) SMLAL	08
Q.3	(a)	Explain in detail ARM 3-stage pipelining.	07
	<b>(b)</b>	Discuss the thumb programmer's model in brief.  OR	07
Q.3	(a)	How branch instructions are executed in ARM?	<b>07</b>
	<b>(b)</b>	Discuss Thumb data processing instructions.	07
Q.4	(a)	Discuss socket functions in detail.	07
ζ	(b)	Explain three modes of serial communication, 'synchronous', 'isosynchronous' and 'asynchronous' using serial devices with one example of each.	07
		OR	^ <b>-</b>
Q.4	(a)	List wireless and mobile system protocols and discuss any two in detail.	07
Q.4	<b>(b)</b>	Compare cooperative scheduling and preemptive scheduling.	07
Q.5	(a) (b)		07 07
Q.5	(a)	How does it is resolved?	07
	<b>(b)</b>	Discuss use of a semaphore as an Event-signalling or Notifying variable.	07