Seat No.:	Enrolment No.

Subject Code: 171005

Subject Name: Embedded Systems

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VII • EXAMINATION – SUMMER • 2014

Date: 31-05-2014

Time: 02:30 pm - 05:00 pm Total Mark Instructions:		: 70	
	1. 2. 3.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
Q.1	(a)	Explain following terms in brief. (i) GPP (ii) Device programmer (iii) IP Core	07
	(b)	List design metrics used in the embedded systems and explain them in brief.	07
Q.2	(a)	Define and classify the embedded systems, explain in brief skills required for an embedded system designer.	07
	(b)	Explain the following ARM instructions with suitable example. (i) RSC (ii) MOVHI	07
	(b)	OR Explain the following ARM instructions with suitable example. (ii) TEQ (ii) STMDB	07
Q.3	(a) (b)	Discuss the ARM programmer's model in detail. Write an assembly language program for ARM processor to find sum of 3P+4Q+9R, where P=2, Q=5 and R=4. OR	07 07
Q.3	(a)	Explain in detail with example 'Conditional Execution' feature of ARM processor.	07
	(b)	Write an assembly language program for ARM processor to calculate $3P^2+5Q^2$, where P=6 and Q=8.	07
Q.4	(a)	Compare the advantages and disadvantages of data transfers using serial and parallel ports devices.	07
	(b)	Explain following terms in brief. (i) Context (ii) Mutex (iii) Interrupt latency OR	07
Q.4	(a) (b)	List wireless and mobile system protocols and discuss any two in detail. Write a short note on Real-Time Operating System and its services.	07 07
Q.5	(a)	List the various states of process/task. Explain them with state transition diagram.	07
	(b)	Write short note on OS security issues. OR	07
Q.5	(a)	What are the situations, which lead to priority inversion and deadlock problems? How does it is resolved?	07
	(b)	Discuss Earlier Deadline First (EDF) precedence and Rate Monotonic Scheduling (RMS) Models.	07
