Enrolment No.____

GUJARAT TECHNOLOGICAL UNIVERSITY M. E. - SEMESTER – I • EXAMINATION – WINTER • 2014

Subject code: 710105NDate: 05-1		2-2014	
Subject Name: Real Time Computing Time: 10:30 am - 01:00 pm Total Mai Instructions:			70
1113	1. 2. 3.	 Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks. 	
Q.1	(a) (b)	Discuss any real time application of your choice in detail. What do you mean by scheduling of real time tasks? Why simple round robin is not suitable for it? How it is extended? Also define feasible schedule.	07 07
Q.2	(a) (b)	What do you mean by real time system? Explain its design issues in details? Draw and explain each part of Non-Von-Neumann architecture in details? OR	07 07
	(b)	What do you mean by performance enhancing? Which parameter to be consider for enhancing performance. Explain each parameter in details?	07
Q.3	(a) (b)	What is requirement engineering process? Explain its types in details. How basic priority ceiling protocol is adapted for system having multiple unit resources? Write scheduling rule, priority inheritance rule and allocation rule of priority for the same.	07 07
Q.3	(a) (b)	OR What do you mean by requirement specification of real time system? Explain limitation of formal method in software specification. What is finite State machine (FSM)? Explain limitation of FSM also draw petri nets for reader writer problem.	07 07
Q.4	(a) (b)	 Justify given statements. (i) Non-preemptive EDF algorithm is not optimal. (ii) EDF is not optimal on multiple processors. Explain general structure of microkernel from RTOS point of view. 	07 07
Q.4	(a) (b)	What is design activity? Compare procedural design and object-oriented design. Explain basic software engineering principles in details?	07 07
Q.5	(a) (b)	Compare Assembly language, Procedural language and object-Oriented language with example? What is queuing theory? Explain the application of queuing theory in real time computing.	07 07
Q.5	(a) (b)	OR Explain any four code smells and their refactoring. What is the need of systems integration tools? List the various tools used for systems integration and also explain patching and probe effect.	07 07
