GUJARAT TECHNOLOGICAL UNIVERSITY
ME - SEMESTER– III • EXAMINATION – SUMMER 2015

Subject Code: 730203   **Date:02/05/2015**
Subject Name: Real Time Systems
Time: 2:30 pm to 5:00 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)**	Define following terms. Release time, Response time, Effective release time, Deadline, Effective deadline, Static Scheduler, Dynamic Scheduler	**07**
	(b)	Explain precedence graph and task graph with example.	**07**
Q.2	**(a)**	Explain hard and soft real time system with proper example.	**07**
	(b)	Explain weighted round-robin scheduling approach with example.	**07**
		OR	
	(b)	Explain challenges in validating timing constraint in priority driven scheduling approach with example.	**07**
Q.3	**(a)**	Discuss pros and cons of clock-driven scheduling approach.	**07**
	(b)	Explain rate monotonic algorithm with example. Compute the total utilization and show schedulability test.	**07**
		OR	
Q.3	**(a)**	List approaches to improve response time of aperiodic jobs. Explain slack stealing scheme.	**07**
	(b)	Explain deadline monotonic algorithms with example. Compute the total utilization and show schedulability test.	**07**
Q.4	**(a)**	List resource access control protocols. Explain Nonpreemptive Critical Section Protocol.	**07**
	(b)	Explain real time protocols.	**07**
		OR	
Q.4	**(a)**	Discuss the model of multiprocessor and distributed system.	**07**
	(b)	Explain resource reservation protocols.	**07**
Q.5	**(a)**	Explain common features of real time operating systems. Give examples of commercial real time operating system.	**07**
	(b)	What is a real time system? Explain briefly real time databases and multimedia application.	**07**
		OR	
Q.5	**(a)**	Explain with example 1. Periodic task 2. Sporadic task	**07**
	(b)	What is real time operating system? How it is differ from general-purpose operating system?	**07**

****