## L8 RT Scheduling

**1. Which of the following is NOT a key requirement of a Real-Time Operating System (RTOS)?**  
A. Timeliness  
B. Predictability  
C. Maintainability  
D. Average Throughput   
**Answer:**

**2. A periodic task is characterized by which three attributes?**  
A. (*Ci*,*Ti*,*Di*)  
B. (*Ci*,*Ji*,*Di*)  
C. (*Ti*,*Di*,*Ri*)  
D. (*Ci*,*Ti*,*Ri*)  
**Answer:**

**3. For Rate Monotonic (RM) scheduling with harmonic task periods, what is the utilization bound?**  
A. 0.828  
B. 0.780  
C. 0.693  
D. 1.0  
**Answer:**

**4. Which schedulability test is both necessary and sufficient for Earliest Deadline First (EDF)?**  
A. Utilization bound  *U*≤*N*(21/*N*−1)  
B. Utilization bound  *U*≤1  
C. Response Time Analysis (RTA)  
D. None of the above  
**Answer:**

**5. The Mars Pathfinder priority inversion issue was resolved using:**  
A. Rate Monotonic Scheduling  
B. Priority Inheritance Protocol (PIP)  
C. Least Laxity First (LLF)  
D. Static Cyclic Scheduling  
**Answer:**

**6. In Least Laxity First (LLF) scheduling, priority is determined by:**  
A. Absolute deadline  
B. Remaining execution time  
C. Laxity (*di*−*t*−*ei*)  
D. Task period  
**Answer:**

**7. Dhall’s effect primarily affects which scheduling algorithms in multiprocessor systems?**  
A. LLF and EDF  
B. RM, DM, and EDF  
C. Static Cyclic Scheduling  
D. Partitioned Scheduling  
**Answer:**

**8. A sporadic task is defined by having:**  
A. Arbitrary interarrival times  
B. A minimum interarrival time constraint  
C. Periodic activation  
D. No deadline  
**Answer:**

**9. Which type of jitter refers to the variation in the time between a task’s start and finish?**  
A. Start-time jitter  
B. Finish-time jitter  
C. Completion-time (I/O) jitter  
D. Activation jitter  
**Answer:**

**10. A feasible schedule is defined as one where:**  
A. Tasks execute in harmonic periods  
B. All tasks complete within specified constraints  
C. Utilization exceeds 0.69  
D. No preemption occurs  
**Answer:**

**11. A set of tasks is schedulable if:**  
A. Its total utilization is ≤1  
B. It passes the Rate Monotonic bound test  
C. There exists at least one feasible schedule  
D. All tasks are periodic  
**Answer:**

**12. Partitioned scheduling in multiprocessor systems is analogous to:**  
A. Global queue management  
B. Bin-packing problem  
C. Priority inversion  
D. Work-conserving scheduling  
**Answer:**

**13. Global scheduling is characterized by:**  
A. Assigning tasks to specific processors  
B. Work-conserving behavior with a common queue  
C. Using harmonic periods for all tasks  
D. Prohibiting task migration  
**Answer:**

**14. The recursive equation for Response Time Analysis (RTA) for Fixed-Priority Scheduling is guaranteed to converge to a finite value.**   
A. True  
B. False   
**Answer:**