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B.E. (Computer Science & Engineering) Seventh Semester (C.B.S.)

Elective - II : Real Time Operating System

P. Pages : 2 **NJR/KS/18/4634**

Time : Three Hours * 0 2 6 2 * Max. Marks : 80

Notes : 1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Due credit will be given to neatness and adequate dimensions.

1. a) What are different characteristics of an Real Time System explain in detail. **7**

b) Explain with example functional parameters of job J_1 of real time workload. **6**

OR

2. a) What is real time system? Explain with an example. How it is different from general purpose computer system. **6**

b) What is hard real-time system as weel as soft real time system? Explain with example. **7**

3. a) Explain preemptive & non preemptive priority driven scheduling approach with example. **7**

b) Write short notes on. **6**
i) Absolute deadline.
ii) Soft timing constriants.

OR

4. a) Explain EDF scheduling in real time operating system with queue structure. **7**

b) What is priority driven approach in scheduling explain with suitable example. **6**

5. a) Explain weighted round robin approach for time shared application. consider two jobs $J_1 \& J_2$ execute on processor $P_1 \& P_2$. Release time for all jobs is '0' & execution time is "1". Draw round robin scheduling for following jobs. **7**

b) Explain petri nets based designing for RTS. **6**

OR

6.	a)	What are the specifications of designing Real Time Operating System and what are the issues designer have to face while designing real time system.	**7**
	b)	What is the difference between Real time database & conventional database.	**6**
7.	a)	Which are different disk scheduling algorithms explain any one with example.	**7**
	b)	Explain the features of real time object oriented programming language.	**7**

OR

8.	a)	What is the difference between error, exception and failure in real time operating system.	**7**
	b)	What is run time support? Explain how to handle run time error in real time system.	**7**
9.	a)	What is overriding? How it is differ from overloading explain with suitable example.	**7**
	b)	What is locking based concurrency control & optimistic concurrency control.	**6**

OR

10.	a)	What are the different types of faults? & Explain Detection & containment.	**7**
	b)	Explain the types of faults that can be tolerated & the faults that can not be tolerated. Also explain the situation for that.	**6**
11.	a)	Write a short note on windows as a real time operating system. How it is different from traditional windows operating system.	**7**
	b)	Describe in detail the different models used for hardware redundancy.	**7**

OR

12.	a)	Explain the problems that you encounter, if you try to develop & run a hard- real time application on the windows operating system.	**7**
	b)	Write a case study on UNIX as real time operating system.	**7**

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High expectations are the key to everything.

~ Sam Walton