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

Elective - II : Real Time Operating System

P. Pages : 2 **NRJ/KW/17/4634**

Time : Three Hours * 0 9 4 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.
9. Assume suitable data whenever necessary.
10. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Differentiate between hard real time system and soft real time system with suitable example. **6**

b) What are the different characteristics of real time system. **7**

OR

2. a) What are the real time feature of an car assembly plant automation system as a Real time system. Explain in detail. **7**

b) Explain functional parameters of Job J1 of Real time workload with an example. **6**

3. a) Discuss offline versus on-line scheduling. Explain with suitable example. **6**

b) Explain preemptive and Non-preemptive priority driven scheduling approach with an example. **7**

OR

4. a) Write short note on. **6**

i) Soft timing constraints. ii) Absolute deadline.

b) Explain queue structure for EDF scheduling in RTOS. **7**

5. a) What is concurrency control? Explain locking based concurrency control. **6**

b) Explain Disk scheduling algorithms in detail. **7**

OR

6. a) Discuss Real time versus General purpose databases in detail. **6**

b) Explain petri net based designing for real time system. **7**

7.	a)	Explain how to handle run time error in real time system with an example.	**7**
	b)	Explain the terms packages, overloading, multitasking with reference to real time programming languages.	**7**

OR

8.	a)	Explain the features of real time object oriented programming language.	**7**
	b)	Explain in detail types of packages used for real time system.	**7**
9.	a)	What are the different types of fault? Also give the detection methods for each of them.	**7**
	b)	What is software redundancy? Give different fault tolerance structure.	**7**

OR

10.	a)	Discuss whether hardware redundancy reduce faults. Explain with an example.	**7**
	b)	Explain Integrated failure handling.	**7**
11.	a)	Discuss Unix and windows based real time system.	**6**
	b)	Explain Non-Preemptive kernel in UNIX RTOS.	**7**

OR

12.	a)	Give the general concept of commercial real time system. How the different applications of RTOS handle software errors.	**6**
	b)	Write short note on RT-Linux.	**7**

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Itâ€™s hard to beat a person who never gives up.

~ Babe Ruth