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

Elective-II : Real Time Operating System

P. Pages : 2 **NIR/KW/18/3579**

Time : Three Hours * 1 9 1 7 * 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. Assume suitable data whenever necessary.
9. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) What do you understand by the term real time? How the concept of real time is different from the traditional motion of time? Explain with suitable example. **8**

b) What are different characteristics of a Real Time system. **6**

OR

2. a) Write down the differences between Hard and Soft real time systems. **7**

b) Give the applications of real time systems. **7**

3. a) Explain preemptive and Non-preemptive priority driven scheduling approach. **7**

b) Write short notes on **6**
i) Task Management.
ii) Inter task communication.

OR

4. a) Discuss offline versus online scheduling. Explain with example. **7**

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

5. a) What is the difference between real time database and conventional database? **6**

b) What are the specifications of designing real time OS and what are the issues designer have to face while designing real time system. **7**

OR

6. a) What is concurrency control? Explain lock-based concurrency control. **7**

b) Explain petri nets analysis. **6**

7. a) Write short notes on: **6**
i) Data Typing.
ii) Control structures.

b) List the timing specifications for good real time language. **7**

OR

8. a) What is the difference between error and exception? Explain how to handle run time error in real time system. **7**

b) Explain types of packages used for real time system. **6**

9. a) Discuss whether hardware redundancy reduce faults. Explain with an example. **7**

b) What are different types of fault? Also give the detection methods for each of them. **7**

OR

10. Discuss Fault Tolerant Scheduling. What are its different advantages over other scheduling algorithms. **14**

11. a) What is Non-preemptive kernel in Unix Real time OS. **7**

b) Write short note on software error model. **6**

OR

12. a) Discuss Unix and windows based real time systems. **7**

b) Write short note on RT-Linux. **6**

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High expectations are the key to everything.

~ Sam Walton