

**7E4051**

Roll No. \_\_\_\_\_

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**7E4051**

**B.Tech. VII Semester (Main/Back) Examination - 2013**  
**Electronics and Comm.**  
**7EC6.3 Operating System**  
**Common with 7EX6.3**

**Time : 3 Hours****Maximum Marks : 80**  
**Min. Passing Marks : 24****Instructions to Candidates:**

Attempt any **five** questions, selecting **one** question from each unit. All questions carry **equal** marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.)

**Unit - I**

1. a) List out the differences between Personal Computer operating system and Main frame operating system. (7)
- b) State the Main functions of operating system in detail. (6)
- c) Define system cells. (3)

**OR**

1. a) Explain the types of operating system with their essential properties in detail. (10)
- b) List out the differences between Linux Operating System and Windows Operating System. (6)

**Unit - II**

2. a) Give a sketch of how an operating system that can disable interrupts could implement semaphores. (10)
- b) Write short note on scheduling. (6)

**OR**

2. a) Solve the dining philosophers problem using monitors instead of semaphores. (10)

- b) Explain the Life cycle of a process with the help of a diagram (6)

**Unit - III**

3. a) Explain the differences between internal and external fragmentation. Which one is occurs in paging system. (10)
- b) What are the different access methods used with file systems? (6)

**OR**

3. a) Explain Mono programming without swapping or paging. (8)
- b) What is paging? Explain Translation Lookaside Buffer. (8)

**Unit - IV**

4. a) Can a Trojan horse attack work in a system protected by capabilities? Justify your statement (10)
- b) What is the difference between a virus and a worm? rtuonline.com (6)

**OR**

4. a) Explain all the access methods used with file systems. (8)
- b) Describe various Design Principles related to the Security in detail. (8)

**Unit - V**

5. a) A computer has six tape drives, with n processes competing for them. Each process may need two drives. For which values of n is the system deadlock free. (10)
- b) Explain the differences between deadlock and starvation. (6)

**OR**

5. a) The bankers algorithm is being run in a system with m resource classes and n process. In the limit of large m and n, the numbers of operations that must be performed to check a state for safety is proportional to  $m^a n^b$ . What are the values of a and b? (10)
- b) Explain how occurrence of deadlock in the system can be prevented (6)