

GUJARAT TECHNOLOGICAL UNIVERSITY
BE SEM-VI Examination-Nov/Dec-2011

Subject code: 163101**Date: 02/12/2011****Subject Name: Operating System Design****Time: 10.30 am -1.00 pm****Total marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1 (a) What do you mean by Operating System? Explain Block diagram of system kernel. **07**

(b) Explain Process states & Transition. **07**

Q.2 (a) When you boot up Unix system, then which process take place? Discuss that flow of that process. **07**

(b) Define **07**

1. System response.
2. throughput

Describe how the buffer cache can help for the response time. Does it help to improve system throughput?

OR

(b) Discuss structure of Regular files. How Unix System maintain Directories? **07**

Q.3 (a) Describe Implementation of Kill System call. **07**

(b) What are the advantages and disadvantages of the buffer cache? **07**

OR

Q.3 (a) Enlist & Discuss System calls For the File System. **07**

(b) Explain Algorithm for conversion of Path Name to an Inode. **07**

Q.4 (a) Explain Context Switching. **07**

(b) How Unix System Mounts a File System? **07**

OR

Q.4 (a) How Unix System Un-mounts a File System? **07**

(b) Explain Race Condition? Show various ways to solve the issues of Race Condition. **07**

Q.5 (a) Design Algorithm that translates Virtual Address space to Physical Address space. Assume that Virtual address & Pregion entry has given. **07**

(b) Design Algorithm for allocating & freeing memory pages & page table. **07**

OR

Q.5 (a) What is the procedure for reading & writing Disk Blocks? Write simple algorithm for the same. **07**

(b) What is Inode & what is its usage in Unix? Explain in Detail **07**