

GUJARAT TECHNOLOGICAL UNIVERSITY**B.E. Sem-VI Examination May 2011****Subject code: 163101****Subject Name: Operating System and Design****Date: 24/05/2011****Total Marks:70****Time:10:30 am to 1:00 pm****Instructions:**

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

- Q.1** (a) What is Kernel? Explain with the Architecture of UNIX OS , How different tasks are done by Operating System? **07**
- (b) Of any process? What are the data structures used to implement process? **07**
- Q.2** (a) What is scheduling? Explain short , medium and long term scheduler. **07**
- (b) Explain Named Pipe and un named pipe system call with example. **07**
- OR**
- (b) Explain Mounting and Un mounting of File System in Unix OS. **07**
- Q.3** (a) What is the use of I-node? What is super Block? Describe structure of I-Node. **07**
- (b) How to implement security in file system? Explain **07**
- OR**
- Q.3** (a) What is Buffer Cache? Explain Retrieval of buffer with algorithm. **07**
- (b) Explain Creation of special files and how it is different from other files in UNIX OS with example. How Keyboard or monitor is represented in file system? **07**
- Q.4** (a) Explain: Open and Read System call **07**
- (b) Write a shell script to copy a file into another file. **07**
- OR**
- Q.4** (a) Explain: Create and Write System call **07**
- (b) Explain fork system call with example. **07**
- Q.5** (a) What is Shell? Explain system boot and init process. **05**
- (b) Explain Race condition and its use in OS. **05**
- (c) Explain the following commands in Unix OS. **04**
- 1) chmod (2) pwd (3) ls -ld
- (4) grep
- OR**
- Q.5** (a) What is Virtual Memory ? What is paging ? Explain **05**
- (b) What is signals? How kernel handles different signals in OS? **05**
- (c) For what purpose the following directories used In Unix OS? **04**
- 1) /etc 2) /bin 3) /dev 4) /usr