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Library  
SHREE DEVI INSTITUTE OF TECHNOLOGY  
MANGALORE - 575 003.

07MCA452

## Fourth Semester MCA Degree Examination, June – July 2009

### UNIX System Programming

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions.

- 1 a. Explain the POSIX feature test macros with a sample program to print the POSIX –defined configuration options. (10 Marks)
- b. Explain the common characteristics of API and describe the error status codes. (10 Marks)
- 2 a. Explain the different types of UNIX files. (10 Marks)
- b. Bring out the differences between hard link and symbolic link. (04 Marks)
- c. Explain the following APIs:
  - i) lseek
  - ii) Access. (06 Marks)
- 3 a. Explain the use of fcntl API for file and record locking. (10 Marks)
- b. Discuss the directory related functions. (10 Marks)
- 4 a. What are the different ways for a process to terminate? Explain exit, exit and atexit functions with their prototypes. (08 Marks)
- b. Explain briefly memory layout of a 'c' program. (08 Marks)
- c. What are command line arguments? (04 Marks)
- 5 a. How is Vfork different from fork system call? (04 Marks)
- b. Write short notes on terminal logins. (08 Marks)
- What is job control? Summarize the job control features with a neat diagram. (08 Marks)
- 6 a. What is a daemon process? Explain daemon characteristics and coding rules. (10 Marks)
- b. Write short notes on signals. (04 Marks)
- c. Explain the following APIs
  - i) Kill
  - ii) Sigaction
  - iii) Sigpending. (06 Marks)
- 7 a. Write about named pipes. Explain the use of named pipes in client server applications (10 Marks)
- b. What are the limitations of pipes? (02 Marks)
- c. Write a note on the following socket options :
  - i) SO-BROADCAST ii) SO- REUSEADDR iii) SO-KEEPALIVE iv) SO-ACCEPTCONN. (08 Marks)
- 8 Write short notes on :
  - a. Structure of a message queue
  - b. UNIX file attributes
  - c. Orphaned process
  - d. Race condition. (20 Marks)

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