S.8

Code No: 9A05602/R09

Set-3

III B.Tech. II Semester Regular and Supplementary Examinations

April/May - 2013

UNIX INTERNALS

(Computer Science and Engineering)

Time: 3 Hours | Max. Marks: 70

*Answer any **FIVE** Questions*

***All** Questions carry **equal** marks*

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1. (a) Draw and explain the Unix directory structure.
   (b) Explain the memory management by using the kernel.

2. (a) List the advantages and disadvantages of buffer cache.
   (b) Write and explain the algorithm for block read ahead.

3. (a) Explain the race condition in assigning of inodes.
   (b) Describe in detail about the allocation of disk blocks.

4. (a) Distinguish between file locking versus record locking.
   (b) A process can open a file in write append mode, meaning that every write operations starts at the byte offset marking the current end of file. Therefore, two processes can open a file in write append mode and write the file without overwriting data. What happens if a process opens the files in write append mode seeks to the beginning of the file?

5. (a) Consider the algorithm for doing a context switch. Suppose the system contains only one process that is ready to run. In other words, the kernel picks the process that just saved its context to run. Describe what happens.
   (b) Draw and explain the process state transition diagram.

6. What is a signal? Explain the role of signals in process communication. Explain in detail, how to handle the signals.

7. (a) What is profiling? Explain it with a suitable example.
   (b) Write and explain the algorithm to swap the processes.

8. (a) List the different system calls involved in message passing. Explain them in detail.
   (b) Write the pseudo code for multiplexing windows.