Code No.: 9A05602/R09

Set-1

III B.Tech. II Semester Regular & 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*

- - -

1. (a) Draw and explain the architecture of unix.
   (b) What is mutual exclusion problem? Present the kernel solution the same.

2. (a) Discuss in detail about the structure of a buffer pool.
   (b) Present a detailed note on buffer headers.

3. (a) Describe an algorithm that takes as in-core I-node as input and updates the corresponding disk I-node.
   (b) Distinguish between read and direct and indirect blocks of an I-node.

4. (a) Explain the role of pipes in transfer of data between processes.
   (b) Discuss in detail about the write system call.

5. (a) When attaching a region to a process, how can the kernel check that the region does not overlap virtual addresses in regions already attached to the process?
   (b) Write and explain the steps for context switch.

6. (a) Explain the role of init in handling the system calls.
   (b) Write and explain the algorithm for allocating the text regions.

7. (a) Implement a system call renice x y, where x is a process ID (of active process) and y is the value that its nice value should take.
   (b) Explain the fair share scheduler with suitable example.

8. Write short notes on the following,
   (a) Role of semaphores in inter process communication.
   (b) Terminal polling.
   (c) Clists.