CP 5153 OPERATING SYSTEM INTERNALS

Important 13 Marks Questions

Unit I

1. Explain the issues of memory management with illustration.
2. With suitable sketch, explain the kernel model.
3. Explain the concept of memory barrier and spinlocks available in Linux.
4. Describe the two techniques available to monitor the end of an I/O operation.
5. Outline the File handling system calls.

Unit II

1. Write short notes on the following:
   (i) Process states
   (ii) Relationship among processes
2. Elaborate in detail about the functionalities of destroying processes.
3. Discuss the system calls that can terminate a User Mode application.
4. With simple examples illustrate the organization of resources by the processes and threads.
5. Explain process identification with suitable illustration.

Unit III

1. With suitable illustration, explain VFS file model.
2. Analyze and explain the implementation of VFS system calls.
3. Write short notes on:
   (i) Namespaces
   (ii) Dentry objects.
4. Interpret the usage of mode object and file objects.
5. Analyze the actions performed while unmounting a file system.

Unit IV

1. Identify and explain the role of page descriptor in page frame management.
2. Demonstrate and explain Buddy System algorithm with relevant example.
3. Describe the process of page frame management used by Linux.
4. Examine in detail about Non-uniform memory access in memory management.
5. Illustrate and explain the components of the zoned page frame allocator with neat sketch.

Unit V

1. Explain how reading from and writing into pipe is carried out.
2. Discuss in detail about Program Segments and Process Memory Regions.
3. Describe the process of creating and destroying pipes with suitable examples.
4. How reading from and writing to a pipe is done? Explain with suitable system calls.
5. Describe the exec functions supported by UNIX.