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Question Paper Code : X 60350

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2020

Sixth/Seventh Semester

Computer Science and Engineering

CS 2028/CS 605/CS 1005/10144 CSE 22 – UNIX INTERNALS

[Common to Information Technology]

(Regulations 2008/2010)

[Also Common to PTCS 2028 – Unix Internals for B.E. (Part-Time) Fifth Semester
– CSE – Regulations 2009]

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. List out the characteristics of UNIX file system.
2. Define :
 - a) Boot block
 - b) Super block
3. Distinguish between disk inode and incore inode.
4. What are the disadvantages of buffer cache ?
5. What are pipes ?
6. What is the use of the kill system call ?
7. What is the use of signals ?
8. Write a brief note on init process.
9. Mention the use of expansion swap in UNIX OS.
10. What is meant by clist ?

PART – B

(5×16=80 Marks)

11. a) i) Explain the architecture of UNIX systems with a neat diagram. (12)
ii) Explain briefly about the operating services provided by Kernel. (4)

(OR)



b) i) Describe the structure of a process and its data structure for memory management. **(12)**

ii) Write short notes on Kernel data structure. **(4)**

12. a) Explain the following :

i) Conversion of a path name to an inode. **(8)**

ii) Inode assignment a new file. **(8)**

(OR)

b) Discuss on :

i) Allocation of disk blocks **(8)**

ii) Reading and writing disk blocks. **(8)**

13. a) Discuss about the change directory, change root, change owner and change mode system calls with their syntax.

(OR)

b) Write and explain the algorithms for opening, reading and writing a file.

14. a) i) Explain the algorithm for handling interrupts. **(8)**

ii) When does the Kernel detach a region from a process ? Explain the algorithm that the Kernel follows while detaching a region from a process. **(8)**

(OR)

b) i) What are signals ? How are they handled ? **(8)**

ii) Explain the implementation of the *exit* system call. **(8)**

15. a) Explain about swapping in detail.

(OR)

b) Discuss in detail the various memory management policies.
