

Code No: **R32054**

R10

Set No. 1

III B.Tech II Semester Regular/Supplementary Examinations, May/June - 2015

UNIX PROGRAMMING

(Comm to CSE and IT)

Time: 3 hours

Max. Marks: 75

**Answer any FIVE Questions
All Questions carry equal marks**

- 1 a) With the help of syntax and example explain the various process utility commands. [10]
b) Distinguish between grep, egrep and fgrep. [5]
- 2 a) Write shell script to print given numbers in reverse order. (eg. If no is 321 it must print as 123) [8]
b) Explain the different special variables present in Bourne shell. [7]
- 3 a) What is a file? What are its characteristics? Explain them in detail. [7]
b) Explain fseek, fopen, fclose system call in detail. [8]
- 4 a) Draw and explain the kernel data structure for unix process. [8]
b) Explain the role of the following system calls with respect to process:
i) fork() ii) Wait() iii) Exec() [7]
- 5 a) Describe in detail about the unreliable signals. [7]
b) Explain the role of kill and raise functions in signal generation. [8]
- 6 a) Explain how to achieve the inter process communication by using FIFOs [8]
b) Write a program to implement the creation of a pipe. [7]
- 7 a) Discuss in detail about the internal data structure of a semaphore. [8]
b) What is a file? Explain Record locking in detail. [7]
- 8 a) Give brief description about the basic two types of process communication. [7]
b) Explain TCP client – server interaction using sockets. [8]

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Set No. 2

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UNIX PROGRAMMING

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Time: 3 hours

Max. Marks: 75

**Answer any FIVE Questions
All Questions carry equal marks**

- 1 a) Describe in detail about the disk utility commands. [8]
b) Give brief description about the file handling utilities. [7]
- 2 a) Write shell script to see current date, time, username and current directory [8]
b) Distinguish between local and environment variables. [7]
- 3 What is a directory? List and explain various directory maintenance systems calls that are present in unix. [15]
- 4 a) What is a process? Draw and explain the structure of a typical process. [8]
b) Describe in detail about the exit, exec and waitpid system calls. [7]
- 5 a) What is the role of the following in signal generation: i) pause and ii) alarm system calls. [8]
b) In contest of unix the signals are asynchronous. Justify. [7]
- 6 a) Write and explain the operations of a FIFO [8]
b) Give brief description about the name spaces. [7]
- 7 a) Discuss in detail about the role of semaphores in unix. [8]
b) Why should we lock the file? Explain it in detail. [7]
- 8 a) What is a socket? Explain the socket system call along with the parameters present in it. [8]
b) What system calls are used to send and receive the data through sockets? Explain them in detail. [7]

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Set No. 3

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UNIX PROGRAMMING

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Time: 3 hours

Max. Marks: 75

**Answer any FIVE Questions
All Questions carry equal marks**

- 1 a) Explain the various backup utility commands with their syntax and example. [8]
b) Explain the use of the following commands in unix:
i) tar ii) cpio iii) rlogin iv) tail. [7]
- 2 a) Write shell script to print nos as 5,4,3,2,1 using while loop [7]
b) List and explain the several types of quotes supported by shell. [8]
- 3 a) Discuss with suitable examples the absolute and relative path names. [7]
b) Describe in detail about the various types of dup system calls. [8]
- 4 a) Differentiate between fork and vfork system calls. [7]
b) Explain the importance of zombie process in unix. [8]
- 5 a) With the help of syntax and example explain the kill and raise functions.
Explain the various parameters present in them. [8]
b) Write a program to implement the sleep function. [7]
- 6 a) How can we achieve full duplex communication by using pipes? Explain in [8]
detail.
b) Explain how to create named pipes using FIFO. [7]
- 7 a) Describe in detail the types of locks available for locking the file. [8]
b) What is a semaphore? Explain the operations that are supported by it. [7]
- 8 a) Explain the role of accept system call in socket programming. [7]
b) Describe the role of port numbers with respect to sockets. [8]

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Set No. 4

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UNIX PROGRAMMING

(Comm to CSE and IT)

Time: 3 hours

Max. Marks: 75

**Answer any FIVE Questions
All Questions carry equal marks**

- 1 a) Discuss in detail about the different networking commands. [8]
b) Distinguish between mount & umount and unmask & ulimit. [7]
- 2 a) Write a shell Script, using case statement to perform basic math operations as '+' for addition, '-' for subtraction, 'x' for multiplication and '/' for division. [8]
b) Give brief description about the flow – control construct present in shell. [7]
- 3 With the help of syntax and example explain the various directory handling systems calls. [15]
- 4 a) Discuss in detail about the process identifiers. [7]
b) Write a program to start a new process. [8]
- 5 a) Which system call is used to suspend the calling process until a signal is caught. Explain it in detail. [7]
b) Write short notes on common uses of signals. [8]
- 6 a) What is meant by inter process communication? Explain its role in UNIX operating system. [7]
b) With the help of a neat sketch, explain the inter process by using pipes. [8]
- 7 a) Give brief description about the operations of a semaphore. [7]
b) Explain the different types of locks in detail. [8]
- 8 Write short notes on the following:
a) Socket() [4]
b) bind () [4]
c) listen () [4]
d) accept() [3]

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