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END-TERM EXAMINATION

FIFTH SEMESTER [BCA] DECEMBER-2007

Paper Code: BCA-305, Paper Id: 20305 **Subject: Linux Environment**

Time : 3 Hours **Maximum Marks :75**

Note: Attempt all questions. Internal choices is indicated.

Q1. Attempt any **three** parts out of the following. (3x5=15)

(a) Write a shell program which informs as soon as a specified user whose name is given along the command line is logged into the system.

(b) What is kernel? Illustrate it's functioning in Unix environment.

(c) Can windows and Linux machine interact via network? Suggest a mechanism.

(d) Write your views on what makes Linux so popular.

Q2. Attempt any **three** parts out of the following. (3x5=15)

(a) Write a shell script to calculate factorial value.

(b) What is a process? How can we create a process? Discuss the difference in between fork( ) and vfork( ).

(c) When do you require named and nameless pipes? What will be difficulties if we want to use pipes for client/server applications.

(d) Write short comments on

(i) Virtual Memory

(ii) Block devices

Q3. Attempt any **two** parts out of the following. (2x7 ½ =15)

(a) Write a program to simulate sleep and wake up behaviors among two process.

(b) What are semaphoses? Does semaphose are available even after me process which created is dead?

(c) Write a program which takes a source file name along the command line and duplicate file names along the command lines and copies me contents of sources file from the destination file.

Q4. Attempt any **two** parts out of the following. (2x7 ½ =15)

(a) What are sockets? Design a client/server model in which client sends an integer value to the server. Server calculates its square and return it to the client.

(b) Define the term "Code inspection". How will you instrument a code by adding few more lines to gather more information about the behaviour of program.

(c) What is a file system? What are the various types of file system. Discuss the various file attributes on ext 2 file system.

Q5. Attempt any **two** parts out of the following. (2x7 ½ =15)

(a) What is multiprocessing? Explain symmetric multi processing in detail.

(b) Write short comments on

(i) Spooling

(ii) Interrupt handling

(c) Write a program which takes a file name along the command line and prints its size.

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END TERM EXAMINATION

FIFTH SEMESTER [BCA] DECEMBER-2008

Paper Code: BCA305	*Subject: Linux Environment*
Paper Id: 20305	*(Batch: 2005-2006)*
Time : 3 Hours	*Maximum Marks :75*

Note: Attempt all questions. Internal choice is indicated.

Q1 Attempt **any three** of the following:- **(5x3=15)**

(a) What are system calls?

(b) How will you add and delete a new user in Linux?

(c) Write a shell script to calculate factorial value.

(d) Which two commands can you use to delete directories?

Q2 Attempt **any three** of the following:- **(5x3=15)**

(a) Write a shell script which displays names of directories in PATH in one line each.

(b) What is pipe? When do you require nameless pipe?

(c) What do you understand by connection oriented and connectionless communication?

(d) What are socket API's?

Q3 Attempt **any two** of the following:- **(7.5x2=15)**

(a) Explain Proc file system in detail.

(b) Explain Linux file system along with the detailed description of ext 2.

(c) What is the difference between Message Queue and pipes?

Q4 Attempt **any one** of the following:- **(7.5x2=15)**

(a) Write short notes on:-
(i) fork ( ) (ii) semaphores

(b) Discuss symmetric multiprocessing. **(15)**

Q5 (a) What are the various steps involved in Kernel recompilation? **(7.5)**

(b) Describe interrupt handling in detail. **(7.5)**

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(4)

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END TERM EXAMINATION

FIFTH SEMESTER [BCA] DECEMBER-2009

Paper Code: BCA305 Subject: Linux Environment
Paper Id-20305

Time : 3 Hours Maximum Marks :75

Note: Q.1 is compulsory. Attempt one question from each unit.

Q1 Attempt **any five** of the following:- (5x5=25)

(a) 'Linux operating system supports multiprocessing, multiprogramming and multiuser'. Elucidate.
(b) Explain the Linux Architecture.
(c) Write a shell program to print all files that have read permission only.
(d) Explain the virtual addres space for a process.
(e) Describe the interrupt handling.
(f) Write shell command for the following:-
  (i) To add the contents of one file to another.
  (ii) To print the last 5 lines from a file.
(g) Write a shell program to accept any 3 numbers from the command line and print the largest number.

UNIT-I

Q2 (a) Write a shell program to print the number of users that are logged in. (2.5)
(b) Explain in brief the data structure in Linux Kernel. (2)
(c) Define the following:- (i) getpid (ii) pause (iii) fork (iv) execve (8)

OR

Q3 (a) Explain any two with suitable example (4)
(i) chmod (ii) wc (iii) grep
(b) Explain the advantages and disadvantages of dynamic memory allocation in the Kernel segment. (4.5)
(c) Write short notes on the following:- (4)
(i) Paging under LINUX (ii) Block devices

UNIT-II

Q4 Explain the following:- (6.5+3+3)
(a) Client – server model (b) Pipes (c) Shared memory

OR

Q5 (a) How does synchronization in the kernel take place? (6.5)
(b) What is message queue? (3)
(c) Explain ipcs and ipcrm commands. (3)

UNIT-III

Q6 (a) What is the function of Kernel deamon? (6.5)
(b) What is module stacking? (3)
(c) Explain the Gdb and printk( ) commands. (3)

OR

Q7 Explain the file system in LINUX. (12.5)

UNIT-IV

Q8 Explain the following:- (4+8.5)
(a) Spooling (b) Symmetric multiprocess

OR

Q9 (a) Explain how message is exchanged between processes? (6.5)
(b) What are the problems with multiprocessor systems? (6)

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END TERM EXAMINATION

FIFTH SEMESTER [BCA] DECEMBER 2010

Paper Code: BCA305	Subject: Linux Environment
Paper ID: 20305	

Time : 3 Hours Maximum Marks : 75

Note: Attempt all questions including Q.1 is compulsory. Internal choice is indicated.

Q1 Explain briefly:- **(5x3=15)**

(a) chmod
(b) sort
(c) grep
(d) pipes
(e) interrupt handling

UNIT-I

Q2 Attempt **any three** parts from the following:- **(3x5=15)**

(a) What is the difference between inode structure and file structure? Explain file structure in detail.
(b) What is a system call? How does it work?
(c) How can we convert linear address to physical address in architecture independent model?
(d) Why virtual memory area is needed? What are the components of it?

UNIT-II

Q3 Attempt **any three** parts from the following:- **(3x5=15)**

(a) How debugging can be done in LINUX? Explain?
(b) Write short notes on:-
(i) Message Queues (ii) Shared Memory
(c) What is Socket? How data can be exchanged using sockets?
(d) Explain data structure provided by LINUX for semaphores.

UNIT-III

Q4 Attempt **any three** parts from the following:- **(3x5=15)**

(a) How file system mounting can be done in LINUX?
(b) What are the different operations an inode structure has? Explain any four operations?
(c) What is the difference between Proc and Ext2 file systems?
(d) Explain Kernel daemon process.

UNIT-IV

Q5 Attempt **any two** parts from the following:- **(2x7.5=15)**

(a) What is multiprocessing? Explain symmetric multiprocessing in detail.
(b) Write short notes on the following:-
(i) Kernal Initialization
(ii) Scheduling
(c) What are the problems with multiprocessing system? Explain.

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END TERM EXAMINATION

FIFTH SEMESTER [BCA] DECEMBER-2012

Paper Code: BCA305 **Subject: Linux Environment**

Time : 3 Hours **Maximum Marks :75**

Note: Attempt five questions including Q.no.1 which is compulsory. Select one question from each unit.

Q1 (a) Attempt **any three** of the following:- **(5x3=15)**

(i) Explain Linux Architecture in brief.

(ii) Name various data structures in Linux. Explain Task Structure in detail.

(iii) Differentiate between file structure and inode structure.

(iv) Explain the Booting process in Linux. What is LILO?

(v) How is scheduling done in Linux?

(vi) Write a short note on History of Linux.

(b) Write Shell Script on **any two** of the following:- **(5x2=10)**

(i) Write a menu driven shell script to add, subtract, multiply and divide two numbers accepted from user.

(ii) Write a shell script to print Fibonacci series.

(iii) Write a shell script to accept 3 numbers from user and find the largest among them.

UNIT-I

Q2 (a) Explain Architecture Independent Memory Model for memory management in Linux. How dynamic memory allocation is done in kernel segment. Explain system call brk(). **(8)**

(b) Explain the concept of globbing/filename substitution with suitable examples. **(4.5)**

OR

Q3 (a) Explain any four with suitable example(s):- **(8)**

(i) cp (ii)chmod (iii) grep (iv) awk (v) cut

(b) Explain various states of a process. Explain the usage of ps and kill commands. **(4.5)**

UNIT-II

Q4 (a) Write short notes on any two of the following:- **(8)**

(i) Debugging using ptrace

(ii) Inter-process communication via files

(iii) Sockets

(b) What is FIFO? How are they created? **(4.5)**

OR

Q5 (a) How inter-process communication is done with Message Queues and Shared Memory? **(8)**

(b) How is synchronization done in Kernel using Semaphores? **(4.5)**

UNIT-III

Q6 (a) Explain basic principles of File System in Linux. What is Virtual File System? **(8)**

(b) How are modules implemented in Kernel? **(4.5)**

OR

Q7 (a) Explain Ext2 file System in detail. **(8)**

(b) What is superblock? Explain its operations. **(4.5)**

UNIT-IV

Q8 (a) Explain in detail symmetric multiprocessing. **(8)**

(b) Write a short note on client-server model. **(4.5)**

OR

Q9 (a) Explain in detail various methods of looping in Linux with suitable examples. **(8)**

(b) Explain the methods of redirecting standard input/output in Linux with suitable examples. **(4.5)**

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END TERM EXAMINATION

SIXTH SEMESTER [BCA] MAY-JUNE 2014

Paper Code: BCA-306 **Subject: Linux Environment (2011 Onwards)**

Time: 3 Hours **Maximum Marks: 75**

Note: Attempt any five questions including Q.1 which is compulsory. Select one question from each unit.

Q.1 (a) Explain the architecture of Linux. (5)
(b) What are different ways of managing & switching users in Linux? (5)
(c) Differentiate between TCHS and Korn shell. (5)
(d) How Linux & Unix is related? Explain. (5)
(e) What is a process in Linux? Explain briefly. (5)

UNIT – I

Q.2 (i) Differentiate between ext2, ext3 and ext4 file systems. (6)
(ii) What are different run levels in Linux? Explain methods to change these run levels. (6.5)

Q.3 (i) Explain in details the Linux file systems architecture with diagram. (10)
(ii) What is Archiving? Give two examples of archive commands. (2.5)

UNIT – II

Q.4 (i) What are redirection operators? Explain the usage with examples. (6)
(ii) Differentiate between symbolic link and hard link. (6.5)

Q.5 (i) Describe the level of security in Linux. (6)
(ii) What is mounting and unmounting? Explain. (6.5)

UNIT – III

Q.6 (i) Differentiate between sed and grep with examples. (6)
(ii) What is a sticky bit? Explain the usage. (6.5)

Q.7 (i) Explain the contents of/etc/passwd' file. (2.5)
(ii) Explain the usage of following commands (2x5=10)
(a) cut
(b) tr
(c) diff
(d) uniq
(e) wc

UNIT – IV

Q.8 (i) Explain how Linux OS schedules the processes. (7.5)
(ii) Explain the role of a process descriptor in Linux. (5)

Q.9 (i) Explain the ways to track the processes in Linux. (7.5)
(ii) Explain the usage of system calls in Linux with example. (5)

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END TERM EXAMINATION

SIXTH SEMESTER [BCA] MAY- JUNE 2015

Paper Code: BCA-306	***Subject: Linux Environment***
	BATCH- 2011 ONWARDS
Time: 3 Hours	***Maximum Marks: 75***

Note: Attempt all questions as directed. Internal choice is indicated

Q1 Explain briefly: - **(5x5=25)**

(a) Explain the use of /etc,/bin,/usr directory in LINUX.
(b) How to identify default file permissions in Linux and what are the ways to change these permissions in Linux.
(c) What are different modes of vi editor?
(d) Explain the usage of sticky bit?
(e) What is Zombie process?

UNIT-I

Q.2 (a) What are different redirection operators in Linux? Explain. **(5)**
(b) Compare "ext2", "ext3" and "ext4" file systems. **(7.5)**

Q.3 (a) Explain the Linux's relationship to Unix. **(5)**
(b) What are different run levels in Linux? How to change within these run levels. **(7.5)**

UNIT-II

Q.4 (a) "Linux is the most secured operating system." Discuss. **(6)**
(b) What is Inode in Linux? Differentiate between Hard Link and Soft Link? **(6.5)**

Q.5 (a) Explain different commands to create archives in Linux. **(7.5)**
(b) Write the steps to mount and unmount a pen drive on Linux machine. **(5)**

UNIT-III

Q6 (a) Explain the usage & options of following commands:- **(3x2=6)**
1) tail
2) cut
3) diff
(b) What is sed? Explain the different purpose of sed with example. **(6.5)**

Q7 (a) Write shell script to print greatest of three numbers entered by the user. **(7.5)**
(b) Write a shell script to print table of a number given by the user. **(5)**

UNIT-IV

Q8 (a) What is Process in Linux? Explain types of Processes in Linux? Explain the role of process descriptor in Linux. **(7.5)**
(b) Explain different process related commands with syntax? **(5)**

Q9 (a) What are different Linux scheduling algorithms? **(6.5)**
(b) Write short notes on: **(3x2=6)**
(1) System calls
(2) Kernel debuggers

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END TERM EXAMINATION

SIXTH SEMESTER [BCA] MAY-JUNE 2017

Paper Code: BCA-306	***Subject: Linux Environment***
Time: 3 Hours	***Maximum Marks: 75***

Note: Attempt any five questions including Q.no.1 which is compulsory.

Q1 Answer following in brief **(any five)**: **(5x5=25)**

(a) Linux initially was developed for intel X86 architecture but has been ported to other hardware platform than any other Operating System. Elaborate this statement.

(b) Why Linux Operating system is Virus free? Explain with reason.

(c) What is BASH? What is the basic difference between BASH and DOS?

(d) What is an MX record? What is a zombie?

(e) Does the Ctrl+Alt+Del key combination work on Linux? Justify.

(f) In Linux, what names are assigned to the different serial ports? Give example.

Q2 (a) What is the core of Linux Operating System? **(6)**

(b) What is the basic difference between UNIX and Linux Operating System? **(6.5)**

Q3 (a) What is LILO? **(6)**

(b) What is an INODE? Make a block diagram of I-node and explain various fields. **(6.5)**

Q4 (a) What is a swap space? Why it is used? **(6)**

(b) What is the advantages of open source? What is the importance of the GNU project? **(6.5)**

Q5 (a) Describe the root account. What is CLI? **(6)**

(b) How can you find out how much memory Linux is using? What is an MX record? Describe the Linux boot-up sequence. **(6.5)**

Q6 (a) What are the various permission types for accessing a file? How it can be examined. Explain symbolic method and numeric method for changing permissions. **(6)**

(b) Explain the functioning of following commands with example:
cd, mv, copy, rm, cat, ps, top, pstree, nice, renice. **(6.5)**

Q7 (a) Differentiate between following in brief: **(6.5)**
(i) symbolic links and hard links
(ii) mount and umount command

(b) Explain in brief following shell scripts commands:
grep, sed, awk. **(6)**

Q8 (a) Explain the various environment variables in brief. What do you understand by sticky bit for a directory? Explain. **(6)**

(b) Explain linux Kernel in brief. How the kernel is installed? Explain the kernel process management in brief. **(6.5)**

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END TERM EXAMINATION

SIXTH SEMESTER [BCA] APRIL-MAY 2019

Paper Code: BCA-306 ***Subject: Linux Environment***

Time: 3 Hours ***Maximum Marks :75***

Note: Attempt five questions in all including question no.1 which is compulsory.

(2.5X10=25)

Q1 Answer the following **(any ten)**:-

(a) Difference between info and man command.
(b) Difference between whoami, w and who command in Linux.
(c) Explain vi editor with mode.
(d) Difference between mount & umount.
(e) How to use environment variable in Linux?
(f) What is run level?
(g) Explain concept of/etc/passwd.
(h) Which command is used to remove duplicate sentence in Linux
(i) Difference between Hard Link and Soft Link.
(j) What is the difference between pipes and filters? Give two examples of each.
(k) Show the "grep" command and its working using example.
(l) There is one command in unix which is named after T splitter used in plumbing. Name that command and discuss its utility. Is there any similarity in function with plumbing?

UNIT-I

Q2 (a) ...t3 and ext4 file systems. **(6.5)**
(b) Explain Linux Directory Structure with suitable diagram. **(6)**

Q3 Explain in details the Linux file systems architecture with suitable diagram. **(12.5)**

UNIT-II

Q4 (a) Explain files security. How to change the permission of file & directory? **(6)**
(b) What is archive? How to compress any file of directory using archives command? **(6.5)**

Q5 (a) How to set default permissions in Linux? It is possible to change permission of super user in Linux. **(6)**
(b) What is Inode? Explain with suitable diagram. **(6.5)**

UNIT-III

Q6 How to use special permission in Linux? Explain its types with suitable example. **(12.5)**

Q7 Explain the following Commands: **(12.5)**
(a) tail (b)tr (c) wc (d) diff (e) Sort (f) aspell (g) uniq (h) sed (i) cut (j) awk

UNIT-IV

Q8 (a) What is System call? Explain any five system calls which are used in Linux. **(6.5)**
(b) What is process state? Explain its types. **(6)**

Q9 (a) How to show current process list in Linux? Suppose if you want to change the priority of any process, how to change it. **(6.5)**
(b) Explain Linux Kernel & Debugger. **(6)**

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