Linux

QP Code : 14643

(2 ½ Hours)   [Total Marks:75]

N.B: (1) All questions are compulsory.
    (2) Figures to the right indicate marks.
    (3) Illustrations, in-depth answers and diagrams will be appreciated.
    (4) Mixing of sub-questions is not allowed.

Q1.   **Attempt the following (any THREE):**   (15)

(A) Explain the major features of LINUX operating system.

(B) Explain the use of 'tar' and 'zip' command.

(C) Describe the use of 'cat' command with various options to display data inside a text file.

(D) What is linking of files in Linux? Explain the different types of file links in Linux with example.

(E) Explain with a diagram the memory management function of the Kernel Module.

(F) Give commands for:

    i.   Considering the following data in File1, write the command to sort the data in File1 in numerical order.

```
1
2
100
45
35
95
150
200
250
11
```

    ii.   Write command to sort the data in File2 in months order. File2 has months name written as :

```
Apr
Feb
Jun
Nov
Aug
Jan
Mar
Oct
Dec
Jul
May
Sep
```

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iii. Write the command to display the words starting with 't' and 'f' from File3. File3contains the data :

one
two
three
four
five
six
seven
eight
nine
ten

iv. Using the same File3, Write the command to display the count of how many lines contain the matching pattern 't'.

v. Write a command to display the last four lines of data in File3.

Q2. **Attempt the following (any THREE):** **(15)**

(A) Explain the following commands:
  i. chown
  ii. chgrp

(B) What is IFS (Internal Field Separator)? Explain its use with example.

(C) Describe how test command is used for file comparisons on the Linux system.

(D) Explain the use of 'read' command with its option and giving example.

(E) Write a shell script to calculate the multiplication table of 5 till 10 (5 * 1 = 5............5 * 10 = 50) Instead of displaying the result on the monitor, the shell should redirect the output to the file output.txt

(F) Write a note on 'case' statement with example.

Q3. **Attempt the following (any THREE):** **(15)**

(A) Explain with example how 'nice' is different from 'renice'?

(B) What is the need of running a program at background? How to run a job at background? Demonstrate with suitable example.

(C) What are the basic features of TCP / IP? Explain.

(D) What are the different substitution flags used in 'sed' command?

(E) Demonstrate with suitable examples how to trap a particular signal and remove the trap from a shell script?

(F) Describe the following Linux system signals :
  i. SIGHUP
  ii. SIGKILL
  iii. SIGSTP
  iv. SIGCONT
  v. SIGINT

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Q4.   **Attempt the following (any THREE):**   (15)
(A)   Explain the process of startup and shutdown in a LINUX system.
(B)   Define the following terms-
    i.   Firewall
    ii. Router
    iii. Bastion host
    iv. Demilitarized zone
    v.   SNAT
(C)   Explain NAT, mangle and filter tables with respect to firewalls.
(D)   Explain how 'fsck' conducts check in each phase.
(E)   Describe the 'superblock' of the LINUX file system.
(F)   Discuss the following commands-
    i.   wall
    ii. su
    iii. ulimit
    iv. fdisk
    v.   mount

Q5.   **Attempt the following (any THREE):**   (15)
(A)   What is the usage of the following common Linux directories?
    i.   /dev
    ii. /root
    iii. /tmp
    iv. /etc
    v.   /mnt
(B)   What is the use of redirection symbols - >, >>, <, << ? Explain with example.
(C)   Write a short note on Berkley r-utilities.
(D)   Describe the init Run Levels of a LINUX system.
(E)   Describe the use of shift command in linux?
(F)   Explain Standard file descriptors.

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