(2 ½ Hours)   **QP Code : 17352**   [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.
     (5) Assume suitable data if needed.

Q1.   **Attempt the following (any THREE):**   (15)
  (A) Explain following options associated with ls command.

      1. −l
      2. −a
      3. −A
      4. −r
      5. −i

  (B) Discuss following with respect to shell prompt:

      1. Definition of shell prompt.
      2. General format of shell prompt.
      3. A variable which controls the shell prompt with example.

  (C) State the purpose of following directories.

      1. /bin
      2. /var
      3. /tmp
      4. /boot
      5. Mnt

  (D) Explain various silent features of Linux Operating System.
  (E) List and explain different types of shell.
  (F) What is the need of creating a link in Linux? How do we can achieve the same?

Q2.   **Attempt the following (any THREE):**   (15)
  (A) Write a note on while and until command with suitable example.
  (B) Explain the purpose of following options which can be used in Linux file comparison. [hint :test command]

      1. −d
      2. −r
      3. −e
      4. −w
      5. −f

  (C) Predict the output of following commands:

      1) wc < tycs   [tycs is a name of file with some data.]
      2) wc << EOF   [assume suitable data for showing output.]
      3) PS2="@"
      4) echo $PATH

     5) ls –l | grep '^d'

(D) State the use of break command. Demonstrate the same using nested for loop.

(E) Describe how to take value from user using read command? Mention 2 options for the same with suitable examples.

(F) Consider the following shell scripts. Find syntax errors if any. and write a complete program with one-two line explanation.

[Note : subject is a text file consisting of data like dcn, java, os .]

file="subject" for $f in "cat file" do echo "all the best for f" done	$count=1 cat subject | while read line do echo "line count = line" count=count+1 done echo "I am done..

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

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

(B) Define the concept of following terms in one or two lines.

    1) network address
    2) FTP
    3) telnet
    4) ipaddress
    5) ping

(C) What are the standard file descriptors? How to redirect output and error to individual files and to a same file. [hint : use of 1 & 2]

(D) Explain Berkely-r utilities.

(E) Consider a file called pet with following data.
I like cat.
I love dog.
I love black dog.
I like white big cat.
This black dog is a father of that small white dog.
Use sed command to perform following.
    1) Replace a word dog with cat.
    2) Delete lines ending with dog.
    3) Insert a word "horse" at line 2.
    4) Replace a word dog with cat in entire file.
    5) Append a word "cow" at line 4.

(F) Discuss following with respect to awk command:

    1) Syntax of command.
    2) Usage of command.
    3) Usage of begin and end.

Q4. **Attempt the following (any THREE):** (15)
(A) List and explain various phases performed by fsck command.
(B) Explain NAT, mangle and filter table.
(C) Explain the following processes:
Startup, shutdown and init.
(D) Write a note on Superblock.
(E) Define the term Linux administrator and explain various duties of system administrator.
(F) Explain the job performed by following commands

    1) wall
    2) su
    3) ulimit
    4) fdisk
    5) mount

Q5. **Attempt the following (any THREE):** (15)
(A) Draw the Linux architecture and state the role of shell and kernel.
(B) What is the purpose following commands?

    1) top
    2) tail
    3) cd ..
    4) touch
    5) od

(C) Compare nice and renice commands.
(D) How to change permission of a file in Linux? Explain with suitable example.
(E) How the kernel manages memory in Linux OS?
(F) Define firewall and state its need in Linux OS.