(Time 2½ 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.
        5) Assume suitable data if required or not given.

Q. 1   Attempt All(Each of 5Marks)   **(15)**
(a)   Multiple Choice Questions
 1)   _____ represents user's home directory.
          (a) /   (b) \
          (c) ~   (d) |
 2)   _____ is not Linux distribution
          (a) Centos   (b) Fedora
          (c) Ubuntu   (d) MS Windows
 3)   **How do you rename file "new" to file "old"?**
          a) mv new old   b) move new old   c) cp new old   d) rn new old
 4)   **Full form of SSH is_____**
          (a) Secure Shell   (b) System Shell
          (c) Source Shell   (d) Superuser Shell
 5)   **Consider a command "echo "My name is khan" | gawk '{$4="university";**
          print $4}" will print
          (a) My name is khan   (b) Khan
          (c) university   (d) My name is univesity

(b)   Fill in the blanks (copy, cp, \dev ,\bin, head , who, chmod)   **(5)**
 1)   _____ command is used to copy files and directories?
 2)   _____ directory contain device special files
 3)   To display information of users _____ command is used.
 4)   _____ command is used to print first few lines of a file.
 5)   _____ is used to change file permissions.

(c)   Short Answers   **(5)**
 1)   State the rules for writing file name in Linux.
 2)   What is the need of cat command in Linux?
 3)   Define the term full duplex with respect to communication.
 4)   What do you mean by shell?
 5)   Give the name (path) of file containing user's password related information.

Q. 2 **Attempt the following (Any THREE)(Each of 5Marks)** **(15)**
(a) Explain the relationship between kernel and shell with a neat diagram.
(b) What are the different points which make GUI more user friendly compare to command line interface?
(c) Justify the importance of Linux as OS on web services and mobiles.
(d) Discuss 'init' process along with its run levels.
(e) Explain the following options for shutdown process.
- -a
- -r
- -h
- Time
- Message
(f) Write use of following directories in Linux:
  i) /etc
  ii) /root
  iii) /bin
  iv) /sbin
  v) /lib

Q. 3 **Attempt the following (Any THREE) (Each of 5Marks)** **(15)**
(a) Write a note on following:
- Launcher
- Dash
- Workspaces
(b) State the purpose of following commands:
- nslookup
- dig
- arp
- factor
- info
(c) What do you mean by environmental variable? Explain following environmental variables in one line.
- PATH
- SHELL
- HOME
- PS2
(d) Explain the use of following commands:
- cal
- date
- wc
- echo
- whoami

(e) Explain in brief hard link and soft link with suitable example.
(f) Discuss following Linux Documentation commands: -
   i)   man
   ii)   info

Q. 4   Attempt the following (Any THREE) (Each of 5Marks)   **(15)**
(a) Write a short note on FTP.
(b) Discuss test command for file comparison.
(c) State the purpose of following Regular Expressions:
    ^ , $, * ,() ,?
(d) Write a shell script to accept 2 numbers from user and one operator. Based on
    the operator entered perform addition, subtraction, multiplication and division.
(e) Write any five privileges of administrator.
(f) Assume that there is a file called "number" with following data

1	2
4	5
6	6
8	9

Write the purpose of awk command and command perform following:
   1) Add two columns.
   2) Find the average.
   3) Multiply two columns.

Q. 5   Attempt the following (Any THREE) (Each of 5Marks)   **(15)**
(a) State the use of ps command with any 4 options.
(b) Explain following file compression utilities:
    i)   bzip2
    ii) gzip
(c) Describe following terms
    • HTTP
    • TCP/IP
(d) List option of ls- l command and describe each column in short.
(e) Discuss IP address.

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