

TYCS sem - VI

Linux

(2 ½ Hours)

Q.P.Code:02775

[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) Differentiate between hard link and soft link.
 (B) Diagrammatically describe Linux architecture.
 (C) Explain the format of "man" page.
 (D) Write the use of following options of 'ls' command.
 i) -l ii) -a iii) -F iv) -r v) -R
 (E) Consider the following records of "Employee". The fields are EmployeeNo, EmployeeName, Designation and salary. Write commands to get following output:
 1001|rajesh|manager|50000
 1002|swati|clerk|15000
 1003|priya|clerk|15000
 1001|rajesh|manager|50000
 i) Find the records where designation is "clerk".
 ii) Sort the records based on "EmployeeName" field.
 iii) Display duplicate record.
 iv) Find the records where designation is not "clerk".
 v) Change field separator from "|" to "~".
 (F) Explain following points in regards with environment variables:
 i) What is environment variable?
 ii) Command to view global environment variable.
 iii) Initialization of variable.
 iv) Command to make local variable as global.
 v) Command to delete local variable.

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

- (A) Explain /etc/passwd file.
 (B) Write commands to get following output:
 i) Create a user.
 ii) Change shell of user.
 iii) Change login name of user.
 iv) Lock account of user.
 v) Delete user.
 (C) Explain any five expr command operators with example.
 (D) Discuss any five test command for file comparisons.
 (E) What is the difference between break and continue statement? Explain.
 (F) Explain the use of following in command line parameters with example:
 i) \$* ii) \$@ iii) \$#

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

- (A) Explain Linux standard file descriptors.
 (B) How can we create our own output file descriptor? Explain.
 (C) What is the use of 'trap' command? Give suitable example.
 (D) Write a short note on 'at' and 'batch' command.
 (E) Assume a file with some meaningful contents into it. Write commands

to get following output : (hint: Use sed / awk)

- i) Replace second word of each line by a text 'new'
 - ii) Append new line containing text "line appended" after line number 3.
 - iii) Delete all lines where pattern 'was' is found.
 - iv) Print the header "Users" followed by list of users available on machine.
 - v) Replace word 'the' by the text 'an' and store that line in file named 'fl'.
- (F) Discuss Berkley r-utilities.

Q4. Attempt the following (any THREE): (15)

- (A) Explain the following terms:
- i) Firewall
 - ii) Demilitarized Zone
 - iii) Bastion Host
 - iv) Iptable
 - v) Router
- (B) Write a short note on Superblock.
- (C) Discuss startup and shutdown activities of Linux system.
- (D) Write any five administrator duties.
- (E) Describe following components of linux file system.:
- i) Data block
 - ii) Inode block
- (F) Explain phases of file system checking (fsck).

Q5. Attempt the following (any THREE): (15)

- (A) Explain the difference between KDE and GNOME desktop.
- (B) Write a script to accept a number from user and find whether number is a prime number.
- (C) List and explain types of substitution flags of sed command.
- (D) Explain following jobs of iptables firewall:
- i) Packet filtering
 - ii) Routing
 - iii) Network Address Translation (NAT)
- (E) Write the use of following filter commands with example.
- i) wc
 - ii) tr
 - iii) split
 - iv) head
 - v) comm
- (F) Write a short note on FTP.