FACULTY OF COMPUTING AND INFORMATICS

DEPARTMENT OF COMPUTER SCIENCE

QUALIFICATION: BACHELOR OF COMPUTER SCIENCE	
QUALIFICATION CODE: 07BACS 07BCMS	LEVEL: 7
COURSE: LINUX SYSTEMS ADMINISTRATION	COURSE CODE: LSA721S
DATE: JANUARY 2025	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 77

SECOND OPPORTUNITY / SUPPLEMENTARY EXAMINATION QUESTION PAPER	
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THIS QUESTION PAPER CONSISTS OF 3 PAGES

(Excluding this front page)

INSTRUCTIONS

1. Answer ALL the questions on the answer scripts.
2. Write clearly and neatly.
3. Number the answers clearly.

PERMISSIBLE MATERIALS

1. Calculator.

Read each question carefully, and then select THE ANSWER that best fits the question

1. Which command is used to identify file type?
   a) type   b) file
   c) finfo   d) info
2. Command used to determine the path of an executable file is
   a) which   b) where
   c) wexec   d) what
3. Command used to count number of character in a file is?
   a) grep   b) wc
   c) count   d) cut
4. Which of these commands could you use to show one page of output at a time?
   a) less   b) sed
   c) pause   d) grep
5. pwd command displays
   a) user password   b) password file content
   c) present working directory   d) none of the mentioned
6. Which of the following commands can be used to change default permissions for files and directories at the time of creation
   a) Chmod   b) Chown
   c) Umask   d) Chgrp
7. Host specific configuration files are installed in
   a) /etc directory   b) /lib directory
   c) /root directory   d) /bin directory
8. Which one of the directory does not contain binary files?
   a) /bin   b) /sbin
   c) /etc   d) none of the mentioned
9. On Linux which of the following is not a valid file type
   a) Socket   b) Inode
   c) Soft linked   d) FIFO
   e) LIFO
10. Which is an example for CD-ROM?
    a) Virtual Terminal   b) block special file
    c) Terminal   d) hard disk

Section B: True or False   [15 Marks]

Read each statement below carefully and state whether it is false or true.

1. Usually, people understand Linux to be an entire software suite of developer tools.
2. Linux cannot be installed on a PC just having the bare minimum resources.
3. inix was designed solely for commercial use and not for classroom teaching.
4. Operating System is a software designed to control the hardware of a system in order to allow users and application programs to make use of it.
5. Ctrl+W is used to search for a text string in nano text editor.
6. You may use makefs -type ext2 to create an ext2 file system.
7. Data on a computer, is stored in binary form as a series of 1s and 0s.
8. In Linux devices are referenced in /dev.
9. Only one unprivileged user may be logged into a Linux system at any given time.
10. Shell is the software that provides an interface for the user of an operating system which needs services of a kernel.
11. -s check if a file has a length greater than 0
12. The wc command is used to find out the number of users logged on.
13. Each commercial vendor publishes a hardware computer list and makes it available on its web site.
14. Shell provides us with an interface to the operating system.
15. We can use the > symbol along with pipe in a command.

Answer all the questions in this section

1. Write down the commands to perform the following:
    i.   To sort /etc/passwd file and store the output into user.txt file.   [2]
    ii.   Tells the user how long the system has been running since its last boot, how many
          users are currently logged in, and how much load the system is experiencing.   [1]
    iii. Give a command used to display all system variables.   [1]
2. Explain what the following commands are doing:
    i.   chgrp labs sales.txt   [2]
    ii.   rpm –qa   [2]
    iii. mount /dev/had /mnt   [2]

3. You are managing a Linux system that needs to perform daily backups at 2 AM without
   any manual intervention. You have a script (backup.sh) ready, but it needs to be
   scheduled to run automatically. How would you use cron to schedule the backup script
   to run every day at 2 AM?   [3]
4. What can be installed to keep the system running during a power failure so that it can
   shut down gracefully?   [2]
5. Name three software management tools used in mainstream Linux distros.   [3]
6. You are a system administrator, and you want to install a .deb package, but you only
   have an .rpm package. What will you do to get a .deb?   [2]
7. Which file will you configure if you want your file system to be mounted at boot time?   [2]
8. What would the syntax be to run a cronjob at 5:30 PM every Monday, Wednesday, and
   Friday?   [2]
9. Where are the password stored in Linux and in which format are they stored?   [2]
10. What do you understand by the term dependency?   [2]
11. What are the responsibilities of the kernel?   [4]
12. Name three important characteristics exhibited by server-grade systems.   [3]
13. There are five types of System Calls, name and explain two of them.   [4]
14. Why would you want to keep a server room under lock and key?   [2]
15. What do you understand by the term 'portability,' which is one of the basic features of
    Linux?   [2]
16. Name three ways to design a server that is unfriendly to casual users.   [3]
17. Write a shell script that prompts the user to enter two numbers. The script should then
    calculate and print the sum and the product of the two numbers.   [6]

Good luck!!