2023

COMPUTER SCIENCE

Paper : CSTSE3012

(UNIX/Linux programming)

Full Marks : 50
Pass Marks : 20

Time : 2 hours

The figures in the margin indicate full marks for the questions

1. Choose the correct answer from the following : 1×5=5

(a) Which Linux command is used to remove directory?

(i) rdir

(ii) remove

(iii) cd

(iv) rmdir

(b) What is the core component of the Linux operating system responsible for managing hardware and providing essential services?

(i) Kernel

(ii) Shell

(iii) Terminal

(iv) Compiler

(c) Which command is used to change the permission of a file?

(i) chmod

(ii) ch

(iii) chown

(iv) chgrp

(d) Which shell is commonly used as the default login shell in most Unix/Linux systems?

(i) Bash

(ii) Python

(iii) Perl

(iv) Zsh

(Continued)

(e) Which command is used to list all the running processes in UNIX/Linux?

(i) ps

(ii) ls

(iii) top

(iv) proc

(f) Regular files are

(i) text files

(ii) binary files

(iii) created by touch command

(iv) All of the above

(g) Which one of the following is not a flavour of Linux?

(i) Mint

(ii) Kali

(iii) Gentoo

(iv) DOS

(Turn Over)

(h) Which one of the following is related to Linux files system?

(i) It's a set of processes

(ii) ext4

(iii) df

(iv) All of the above

(i) Booting in Linux refers to

(i) execution of bootloader

(ii) loading of kernel image

(iii) mounting of file system

(iv) All of the above

(j) Which one of the following is not a component of Linux architecture?

(i) Kernel

(ii) Command.com

(iii) Shell

(iv) System libraries

(Continued)

2. Answer the following questions (any *five*) : 2×5=10

(a) What is a shell in the context of UNIX/ Linux, and how does it relate to the command line interface?

(b) Describe the significance of the 'root' user in UNIX/Linux systems.

(c) Explain the concept of file permissions in UNIX/Linux. What are the three sets of permissions, and what do they control?

(d) What is the fork() system call?

(e) What is the purpose of the ls command in UNIX/Linux?

(f) What is a filter in a shell script?

(g) What do you know about granting rights in Linux?

3. Answer the following questions (any *five*) : 5×5=25

(a) What is a shell script in UNIX/Linux and how can it be created and executed? Provide a simple example.

(Turn Over)

(b) Explain the concept of file permissions in UNIX/Linux. Provide an example of how to change the permissions of a file.

(c) Write a shell script to check whether the given number is prime or not.

(d) Explain the following commands with example :

(i) who

(ii) pwd

(iii) ps

(iv) whoami

(v) cal

(e) Explain the inode structure of Linux.

(f) Explain how a C program can edit, compile and run in vi editor?

(g) Write a short note on "grep".

(h) Explain how you create partitions in Linux.

(i) Explain the stucture of UNIX file system.

(Continued)

4. Answer the following question (any *one*) : 10

(a) What are editors? Explain the process write, compile and execute of C program using vi editor.

(b) Explain the basic of file system architecture of UNIX/Linux.

(c) Describe utility programs in detail.

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