# MCA-305

## June - Examination 2026
## MCA 1st / MCA 3rd Year Examination
## Linux System Administration
## Paper : MCA-305

[*Time: **3** Hours*] [*Maximum Marks: **80***]

**Note :-** The question paper is divided into three Sections A, B and C. Write answers as per the given instructions in each section.

**Section-A** **8×2=16**

**(Very Short Answer Type Questions)**

**Note :-** Answer **all** questions. As per the nature of the question delimit your answer in one word, one sentence or maximum up to **30** words. Each question carries **2** marks.

1. (i) Define the term "Open Source Software".
   (ii) Name any two popular variants (distributions) of the Linux Operating System.
   (iii) What is the purpose of a "Kernel" in Linux?
   (iv) Which command is used in a bash shell script to accept input from the user?
   (v) State the primary functions of the inode.
   (vi) Write the command used to become a super user (root) from a standard user account.
   (vii) How do you temporarily disable a user's account in Linux?
   (viii) What specific information does the uname command provide?

**Section-B** **4×8=32**

**(Short Answer Type Questions)**

**Note :-** Answer **any four** questions. You have to delimit your each answer maximum up to **200** words. Each question carries **8** marks.

2. Differentiate between Proprietary Software and Free Software. Provide two examples for both.
3. Write a shell script using a while loop to print the first 10 even numbers.
4. Describe the step-by-step process of creating a new group and modifying group attributes in Linux.

5. Write a short note on the X-Windows system.
6. Discuss how to install and remove packages via the command line. How do you check system disk partitions and their sizes?
7. Explain creating a basic website in the Apache Web server. Also, explain some of the performance parameters in the Apache Web server with a suitable example.
8. Explain the concepts of mounting and unmounting a file system. Mention the standard commands used for these operations.
9. Describe the system call in the Linux OS. Explain its different types.

## Section-C

**2×16=32**

**(Long Answer Type Questions)**

**Note :-** Answer **any two** questions. You have to delimit your each answer maximum up to **500** words. Each question carries **16** marks.

10. Discuss the Linux installation process in detail. In your answer, cover the steps for partitioning the hard drive, the practical differences between using a Live CD versus a Virtual machine and how to perform a backup and restore of files post-installation.
11. What is Shell Programming? Explain conditional statements (if-else) and case statements in bash. Illustrate your explanation with a complete shell script that utilizes parameter passing, variables and conditional logic.
12. Discuss system administration and file security in detail. Explain how an administrator manages file permissions and ownerships using the chmod, chown and chgrp commands. Include absolute (numeric) and symbolic modes in your explanation.
13. Elaborate on the management of user accounts in a Linux environment. How do you add, modify and delete users? Additionally, explain how configuration and log files are identified, maintained and monitored for system performance.

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