Name : ....

Roll No. : ....

Invigilator's Signature : ....

CS/MCA/SEM-5/MCAE-502A/2012-13

2012

SYSTEM ADMINISTRATION & LINUX

Time Allotted : 3 Hours   *Full Marks* : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words

as far as practicable.

GROUP – A

(Multiple Choice Type Questions)

1.   Choose the correct alternatives for the following :   10 × 1 = 10

   i)   Which one is not the responsibility of System Administrator ?

      a)   Create a new user account

      b)   Taking regular backup of the system

      c)   Design new application software

      d)   Install Software.

   ii)   The UNIX command 'ipcs –s' is used to display

      a)   Process table   b)   Routing table

      c)   Semaphore table   d)   none of these.

   iii)   Run Level 4 stands for

      a)   Reboot   b)   Unused

      c)   Multi-user mode   d)   none of these.

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iv) The UNIX command 'ifconfig' is used to

    a) configure the routing table

    b) display the file system

    c) display the IP address and MAC address

    d) none of these.

v) If a network has maximum of 128 hosts and IP address of one host is 192.168.100.240 then what will be the network address ?

    a) 192.168.100.7   b) 192.168.100.0

    c) 192.168.100.128   d) None of these.

vi) PID of Orphan child is

    a) 1   b) 0

    c) unpredictable   d) none of these.

vii) The UNIX command 'chkconfig' is used

    a) to on a process at boot time

    b) to off a process at boot time

    c) both (a) and (b)

    d) to check the file system.

viii) The UNIX command to set the password of a user is

    a) password   b) passwd

    c) addpassword   d) none of these.

ix) The UNIX command 'tar' is used to

    a) backup the system   b) recovery

    c) both (a) and (b)   d) none of these.

x) The 'ping' command used the protocol

    a) ICMP   b) DHCP

    c) TCP   d) none of these.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following   3 × 5 = 15

2. What do you mean by symbolic link ? Explain with an example.

3. Write a shell program to add new user with the following data :

    i)   User Name   : MCA
    ii)   Login Name   : Masters
    iii) Home directory   : mca
    iv)   Group Name   : WBUT
    v)   Password   : system
    vi)   Default shell   : bash.

4. What is the associative array in PERL ? Write a program to implement an associative array in PERL.

5. Write down the difference between GET and POST method.

6. How can we change the run level ? How can we abort shutdown ?

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following.   3 × 15 = 45

7. a) Mention the roles played by a System Administrator of a Linux Server.

    b) What is the utility of 'mount' command in Linux ? How can it be used to mount a Windows partition '/dev/sda5' of type 'NTFS' at a mount point '/mnt/MP1'. Explain the syntax.

    c) Mention the use of '.profile' file for a Linux User.

                                                7 + (2 + 3) + 3

8. a) What is a Semaphore ?   3

    b) Design a program to synchronize two processes P0 and P1 so that they work alternately 'n' number of times.

    c) Write down the steps for configuring Apache Server on Linux.

    d) Mention how access control is managed for a message queue.   2 + 5 + 5 + 3

9. a) What are daemons ?

    b) What is *init* ? What is the utility of /etc/inittab ? What are the purposes of different Run-Levels in Linux ?

    c) What is a Single User Mode ? How can you boot your system in Single User Mode ?   2 + (2 + 2 + 5) + (1 + 3)

10. a) Write a shell program to add a new user in your system with the following details :

        Group Name : "MCA"

        Login Name : "Student"

        User Name : "Rama"

        Default Shell : "korn"

    b) Modify the above user to add a password 'abc123' and set the password expiration date 15/07/2014.

    c) Also modify the home directory of the user 'Rama' as /home/Rama/Prog.   8 + 4 + 3

11. Write short notes on any *three* of the following :   3 × 5

    a) Telnet *vs* SSH

    b) Sockets and IPC

    c) NFS Server Configuration

    d) Symbolic Link and Hard Link.

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