MCA (Revised) / BCA (Revised)
Term-End Examination
June, 2016

06266

MCS-022 : OPERATING SYSTEM CONCEPTS AND NETWORKING MANAGEMENT

Time : 3 hours   *Maximum Marks : 100*

(Weightage 75%)

Note :   *Question no.* 1 *is* **compulsory**. *Answer any* **three** *questions from the rest.*

1. (a)   Describe the structure and characteristics
           of any two different types of guided
           transmission media.   5

    (b)   (i)   What are the different layers of the
                  TCP/IP protocol suite ? Write the
                  function of each. Give a mapping
                  between the TCP/IP layers and the
                  OSI layers.   10

           (ii)   Explain the layers of the "THE"
                  operating system and their structure.   5

    (c)   What is the Windows NT Registry ? What
           does it consist of ? Explain how you can
           secure the Registry and audit its critical
           components.   10

(d) Describe the data structure of a process in LINUX, giving its components and the structure of each. How does the data structure of a process differ from that of a thread ?   *10*

2. (a) What is a firewall and what are its functions ? Describe how it is useful and explain its limitations.   *10*

   (b) (i) List the 7 RAID levels. What are the limitations of disk striping ?   *4*

       (ii) How can you configure a domain user account in Windows to allow the user to access her account only from 08:00 to 12:00 hours on Saturdays and Sundays ?   *3*

       (iii) In LINUX, what is the purpose of the file "/etc/shadow" ? Why is it readable only by root ?   *3*

3. (a) (i) As an ordinary user in LINUX, you have a file called "secret" with some set of permissions. By writing the relevant commands, give two ways to remove write permission for all except yourself from "secret", such that the other permissions that already exist for the file remain unchanged. $2\frac{1}{2}$

       (ii) Write the LINUX command to display on the screen a given word as many times as it occurs in a text file. $2\frac{1}{2}$

(iii) There is a program "wonderful" that takes a file as a command line argument and produces output and any error message on the screen. Write the LINUX command to run "wonderful" on "bigfile", as input file, sending the output to "outfile" and error messages to "diagfile". $2\frac{1}{2}$

(iv) Describe with examples the syntax and usage of the "mesg" command. $2\frac{1}{2}$

(b) Write a bash shell script in LINUX called "calculate" that provides the result of the four basic arithmetic operations for two numbers. For example,

$ calculate 96/6

16

$

Ensure that your script carries out basic error checking.   *10*

4. (a) (i) Explain the function of any two protocols in the TCP/IP suite.   *2*

(ii) Explain the meaning and utility of unicasting, multicasting and broadcasting.   *2*

(iii) What is the mesh topology ? How is it different from star topology ?   *2*

(iv) What are Data Terminal Equipments and Data communication Equipments ?   *2*

(v) What is a multiprocessor operating system ?   *2*

(b) (i) How can one encrypt a file using EFS in Windows XP ? *2*

(ii) Name any two network protocols supported by Windows 2000. *2*

(iii) What is a roaming user profile in Windows 2000 ? *3*

(iv) List six events that can be audited on a Windows 2000 computer. *3*

5. Write short notes on the following : *4×5=20*

(a) Backups, describing all the three types of it

(b) Working of Windows 2000 in User mode and Kernel mode

(c) Group Policy in Windows 2000

(d) Installation classes while installing LINUX

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