



MASENO UNIVERSITY

UNIVERSITY EXAMINATIONS 2016/2017

**SECOND YEAR SECOND SEMESTER EXAMINATIONS FOR THE
DEGREE OF BACHELOR OF SCIENCE IN INFORMATION
TECHNOLOGY**

MAIN CAMPUS

CIT 216: SYSTEM ADMINISTRATION AND MANAGEMENT

Date: 8th June, 2017

Time: 3.30 - 6.30 pm

INSTRUCTIONS:

- Answer ALL questions in SECTION A and any other TWO from SECTION B
- Write your registration number on all sheets of the answer book used.
- Use a NEW PAGE FOR EVERY QUESTION attempted, and indicate number on the space provided on the page of the answer sheet.
- Mobile phones and PDAs are NOT allowed in the examination room.



SECTION A (30 MARKS)
ANSWER ALL QUESTIONS: EACH QUESTION CARRIES 1 MARK, UNLESS
OTHERWISE INDICATED

WINDOWS SYSTEM ADMINISTRATION

1. What PowerShell command would you use to install the Hyper-V role on a computer running Microsoft Windows Server 2012?
A. Install-WindowsFeature -Name Hyper-V -ComputerName <name> -IncludeManagementTools -Restart
B. Install-WindowsFeature HyperV -ComputerName <name> -IncludeManagementTools -Restart
C. Install-WindowsFeature Hyper-V -IncludeManagementTools -Restart
D. Install-WindowsFeature -Name HyperV -ComputerName <name> -IncludeManagementTools -Restart

2. Does Windows Server 2012 allow Remote Desktop connections by default?
A. Yes
B. No

3. Which role of Windows Server 2012 enables your server to act as a DHCP Relay Agent?
A. DHCP Server B. DNS Server C. Network Policy and Access Services D. Remote Access

4. What are two types of user accounts in Windows Server 2012? (2 marks)
A. Authorized Users B. Local Users C. Power Users D. Domain Users

5. Which of the following is not a method of assigning IPv4 addresses to computers running Windows Server 2012?
A. Manual configuration B. APIPA C. DHCP
D. IANA

6. Windows server 2012 requires what processor architecture?
A. 64-bit processor only B. 32-bit processor only
C. 32 and 64-bit processor D. 64 and 128-bit processor

7. You work as an administrator at ABC.com. The network consists of an Active Directory forest that contains a root domain and two child domains (us.ABC.com and uk.ABC.com). All the servers on the network have Server 2012 installed. The root domain hosts a domain local distribution group, named ABCGroup. You are prepping to issue ABCGroup read-only access to a shared folder hosted by the us.ABC.com domain. Which of the following actions should you take?
A. configure ABCGroup as a universal Admins group
B. configure ABCGroup as a universal security group
C. configure ABCGroup as a global administrators group
D. configure ABCGroup as a local administrators group

8. Which features must you remove from a full GUI installation of Windows Server 2012 to convert it to a Server Core installation? (Choose all that apply.) (2 marks)
a. Windows Management Instrumentation
b. Graphical Management Tools and Infrastructure
c. Desktop Experience
d. Server Graphical Shell

UNIX SYSTEMS ADMINISTRATION

9. Which of the following utilities provides information in the format given below?

```

1  150 ns  151 ns  130 ns  aldirr1-a.sancharnet.in [61.0.97.41]
2  250 ns  130 ns  131 ns  aldi11-a.sancharnet.in [61.0.97.46]
3  331 ns  481 ns  851 ns  61.0.233.22
4  411 ns  *      861 ns  61.0.225.130
5  1041 ns 1182 ns 1151 ns 203.197.232.169
6  1082 ns *      1142 ns 203.200.87.15
7  1062 ns 1161 ns 1272 ns vsb-delhi-stnl.Bbone.vsnl.net.in [202.54.2.241]
8  1853 ns *      1622 ns so-2-3-2-ar2.NYC2.gblx.net [64.211.60.57]
   1462 ns 1302 ns 1322 ns pas4-0-622H.cw1.NYC2.gblx.net [208.40.234.200]

```

- A.PING B.NBTSTAT C.TRACERT D.NETSTAT
10. Which of the following protocols/tools is MOST likely to be used in integrating a Linux system into a Windows network, and for accessing Windows files?
A. NFS B. SAMBA C. FTP D. SC
11. Which of the following command lines can be used to determine the list of modules that have been compiled into the Apache web server?
A. `ls /etc/httpd/modules` B. `httpd -l` C. `apache -modules` D. `less /etc/httpd/conf/modules.conf`
12. Which of the following TCP/IP network utilities is the BEST tool to use to establish if a given IP address is reachable under the current network configuration?
A. ping B. finger C. route D. host
13. Which Linux command can be used to create a new user account?
A. `newuser` B. `useradd` C. `mkuser` D. `usercfg`
14. Which command line can be used to restart a running Linux system immediately?
A. `restart --delay=0` B. `reboot -w` C. `halt -p` D. `shutdown -r now`
15. Which Linux command is used to assign privileges over a particular file to a designated user
A. `chroot` B. `chown` C. `assign` D. `chgrp`
16. Which Linux command can be used to determine the available space on local hard-disk partitions?
A. `free` B. `df` C. `du` D. `fdisk`
17. Applications communicate with kernel by using:
A. System Calls B. C Programs C. Shell Script D. Shell
18. Suppose that you have configured one Linux system on an internal LAN to run a DNS server. Which of the following files need to be updated on each DNS client on the LAN to get them to utilize the DNS service?
A. `/etc/hosts` B. `/etc/exports` C. `/etc/resolv.conf` D. `/etc/dns.conf`
19. Under UNIX the key board is the default input device and the monitor is the default output device
A. True B. False

20. Which are the major branches in the Unix family tree?
[A] AIX and Solaris [B]BSD and SYS V [C]Linux and BSD [D]Sys V and Solaris
21. Which of the following is not one of the 3 general components of the Unix operating system?
[A] the kernel [B]the shell [C]the GUI [D]the file system
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GENERAL SYSTEM ADMINISTRATION

22. Which one of the following people would be least likely to use technical documentation?
A. a programmer B. a system designer C. a database entry operator D. a computer systems engineer
23. An organisation requires a computer system that will accommodate ten or more clients running programs from a Client Server at the same time. The type of operating system that satisfies this requirement is a
A. multi-user. B. multitasking. C. multithreading. D. multiprocessing.
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24. You receive a call from Mary, the Human Resources Manager, complaining that she is unable to save a file that she is currently updating on a shared directory. When Mary attempts to save the file the following error message is displayed: 'This file is locked for editing by another user'. This type of issue is categorised as
A. a bug in the program. B. access rights. C. connectivity. D. security
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25. At what stage should a service system be evaluated, by both users and technical specialists, to determine how well it has met its original objectives?
A. during systems design B. during implementation C. during day-to-day operations D. during conversion from an old system to the new system
26. Frequency of failure and network recovery time after a failure are measures of the _____ of a network.
A) Performance B) Reliability C) Security D) Feasibility
27. An unauthorized user is a network _____ issue.
A) Performance B) Reliability C) Security D) All the above
28. Which of the following terms describes the process of granting users access to file server shares by reading their permissions?
a. Authentication b. Authorization c. Enumeration d. Assignment
29. Which of the following cannot contain multiple Active Directory domains?
a. Organizational units b. Sites c. Trees d. Forests
-
30. Which of the following are local groups to which you can add users with the Windows Control Panel? (Choose all that apply.)
a. Users b. Power Users c. Administrators d. Non-administrators

SECTION B: ANSWER ANY TWO QUESTIONS

QUESTION 2

- a) Discuss the main features of Windows Server 2012. How is Windows Server 2012 different from Windows 10? Give your answer with the help of a scenario. (7 marks)
- b) Why do we need to study security in System Administration and management? (3 marks)
- c) Security in System Administration and management can be classified as System Administration and management **computer security, network security and internet security**, contrast these three forms of security. (6 marks)
- d) The basics of running a helpdesk are first to simply have one and to ensure that it has a friendly face. Comment on this statement. (2 marks)
- e) Why is it always advised to have two separate helpdesks: one for requesting new services and another for reporting problems that arise after the service has been successfully enabled? (2 marks)

QUESTION 3

- a) What are the main features of a Unix-based operating system? Discuss the significance of Linux LTS servers over Windows Server operating systems. (7 Marks)
- b) In a typical network environment, what must be disabled if a Network Administrator were to be fired? (6 marks)
- c) What improvements to your system could make it easier to disable access when a Network Administrator is fired? (1 marks)
- d) Design a job advert for a Network Administrator. Write a detailed job description for an open position in a group you are heading or for a position for which you would like to be able to hire someone. (6 marks)

QUESTION 4

- a) Virtualization is a general and ambiguous term that typically means to run multiple instances of something inside something that was intended to only run a single instance. Explain. (2 marks)
- b) What is a Hypervisor? (2 marks)
- c) What are the inherent benefits of virtualization? (6 Marks)
- d) What does the process of server upgrades constitutes? (3 Marks)
- e) Outline the best practices to follow when performing server upgrades (7 Marks)

QUESTION 5

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- a. What is the difference between Authentication and Authorization? How can we authorize a specific user for accessing a printer in a networked environment? (5 marks)
 - b. Operational requirements are those statements that "identify the essential capabilities, associated requirements, performance measures, and the process or series of actions to be taken in effecting the results that are desired in order to address mission area deficiencies, evolving applications or threats, emerging technologies, or system cost improvements. What are some of the operational requirements that an SA needs to consider (5 marks)
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- c. Differentiate between soft outages and hard outages (4 marks)
 - d. Single vs multiple servers. Comment on the instances where single servers and multiple servers will be ideal. (6 marks)
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