



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

FACULTY OF COMPUTING AND INFORMATICS

DEPARTMENT OF COMPUTER SCIENCE

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SUPPLEMENTARY/SECOND OPPORTUNITY EXAMINATION QUESTION PAPER	
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THIS QUESTION PAPER CONSISTS OF 5 PAGES
(Excluding this front page)

INSTRUCTIONS

1. Answer **all** questions in **Section A and B**.
2. Write all your answers in the answer booklet provided and number every question.
3. Please, ensure that your writing is **legible, neat and presentable**.
4. Marks/scores per question are given in square brackets [].
5. Do not use or bring into the examination venue books, programmable calculators, mobile devices and other material that may provide you with unfair advantage. Should you be in possession of one right now, draw the attention of the examination officer or invigilator.
6. All things that should **not** be marked, e.g. any "rough work", have to be crossed out unambiguously.

SECTION A

1. True or False

- (a) Community strings is the authentication type used by SNMPv1. [1]
- (b) The HTTP response code 200 is an example of success when accessing a website from a webserver. [1]
- (c) RADIUS and TACACS+ allow accounting of commands. [1]
- (d) LDAP listens on port 389 for regular communication. [1]
- (e) PXE is an acronym for Pre boot execution environment. [1]
- (f) Subnet delay in milliseconds is used when you have two dhcp servers and you want to set one as the preferred one and a backup. [1]
- (g) When setting up a first domain controller in your network, that will be the default global catalog server. [1]
- (h) The default configuration file for apache webserver in CentOS is: **/etc/httpd/conf/httpd.conf** [1]
- (i) You can add a user to a samba database with **smbpasswd -a** command even if the user does not exist in unix database (/etc/passwd). [1]
- (j) When configuring a proxy server, swap directories are created by **squid -z** command. [1]
- (k) You can create host reservations from address leases tab. [1]
- (l) One of the benefits of a proxy server is that it can reduce bandwidth charges. [1]

SECTION B

2. (i) Matangara Holdings is experiencing problems with employees setting up a lot of DHCP servers within the network through virtual machines. You have been hired to solve this problem so that only a legitimate DHCP server can allocate IP addresses to clients. All DHCP servers set by employees in their virtual machines must be blocked. How are you going to solve the problem?

[2]

(ii) What is a DHCP scope?

[2]

(iii) What solution would you employ if you had fewer IP Addresses than clients and no option to extend your address pool?

[3]

(iv) You are the Systems Administrator for an Engineering Company. You are running four servers within your network namely Proxy server, Mail server, DHCP server and Web server. One employee is failing to access the emails and he called you to fix the problem. In the process of troubleshooting the problem, you used the `ipconfig /all` command and you get the following results:

```
Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix . . : 
    Autoconfiguration IPv4 Address. . . : 169.254.198.170
    Subnet Mask . . . . . : 255.255.0.0
    Default Gateway . . . . . :
```

Based on the information shown above what could be the problem and how are you going to fix it?

[4]

3. Analyse samba configuration below:

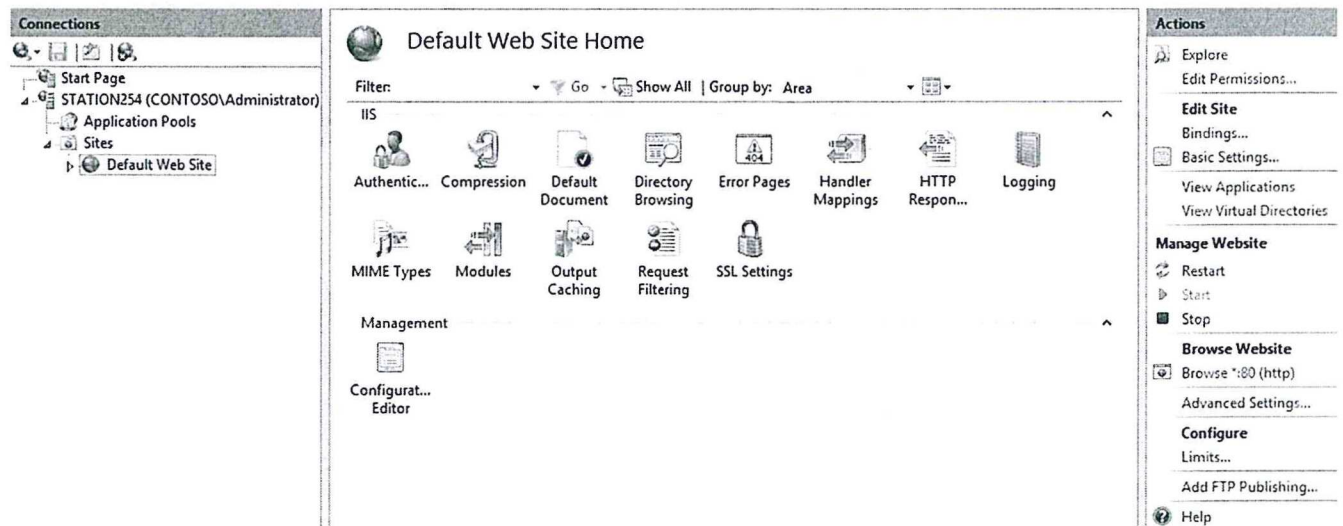
```
[global]
    workgroup = samba
    security = user
    passdb backend = tdbsam

[Virtual Machines]
    comment = VirtualMachines
    path = /home/vms
    valid users = labs, thomas
    write list = @user1, root

[Homes]
    comment = Home Directories
    browseable = no
    writeable = yes
;    valid users = %S
;    valid users = MYDOMAIN\%S
```

- (a) From the diagram above, there are two shares. List the two names of the actual folders being shared. Absolute path will be required. [2]
- (b) If I create my samba user called iis. Which folder can be accessed by the user iis when the user connect to the server? Use only the parameters specified under the **[homes]** to explain your answer. [2]
-
- (c) If the samba server is a domain controller, what name will be used to join windows clients to the domain? [1]
- (d) How many users are able to modify contents under [Virtual Machines]? [2]

4. Analyse the diagram below and answer questions that follow. The diagram was extracted from a Windows Server 2012 Web Server.



- (a) What is the name of the Web Server Service which comes with Windows Server 2012?
[Hint: The service is the one with the diagram shown above] [1]
- (b) After uploading your website to your web server you discovered that when accessing the website, it is not displaying your website's homepage. Which tab allows you to set the default home page and make it the first entry on the list? [2]
- (c) You want to change the default document root directory of your website, which tab can be used to achieve this? [2]
- (d) Your Web Server is listening only to port 80 and you want it to accept requests through port 443. Which option allows you to do this? [2]
- (e) You discovered that your server can only allow a maximum of 50 concurrent users and you need to increase this to 5000 concurrent users. Through which option can you achieve this? [1]
- (f) SSL is an acronym for? What will be the advantage of integrating your Web Server with SSL? [3]
- (g) Company D wants to host their website on the same server hosting your website so that the two websites can be accessed from the same machine. Which option or tab can be used to do this? [2]

5. Study the rules below extracted from the iptables file in CentOS Linux Server and answer the following questions:

```
-A RH-Firewall-1-INPUT -m state --state NEW -m tcp -p tcp --dport 22 -j ACCEPT
-A RH-Firewall-1-INPUT -m state --state NEW -m tcp -p tcp --dport 80 -j ACCEPT
-A RH-Firewall-1-INPUT -m state --state NEW -m tcp -p tcp --dport 137 -j ACCEPT
-A RH-Firewall-1-INPUT -m state --state NEW -m tcp -p tcp --dport 138 -j ACCEPT
-A RH-Firewall-1-INPUT -m state --state NEW -m tcp -p tcp --dport 139 -j ACCEPT
-A RH-Firewall-1-INPUT -m state --state NEW -m udp -p udp --dport 137 -j ACCEPT
-A RH-Firewall-1-INPUT -m state --state NEW -m udp -p udp --dport 138 -j ACCEPT
-A RH-Firewall-1-INPUT -m state --state NEW -m udp -p udp --dport 139 -j ACCEPT
-A RH-Firewall-1-INPUT -j REJECT --reject-with icmp-host-prohibited
COMMIT
-A RH-Firewall-1-INPUT -m state --state NEW -m tcp -p tcp --dport 443 -j ACCEPT
-A RH-Firewall-1-INPUT -m state --state NEW -m tcp -p tcp --dport 23 -j ACCEPT
~
```

- a) Employees have been having different problems when accessing the server.
- i. User1 is able to access the website hosted on the linux server using non secure protocol and when the user tried to access the same website using the secure protocol it failed. Based on rules shown above, what can be done to rectify this issue so that user1 will be able to use secure protocol when accessing the website. [3]
 - ii. A group of 5 users are using a program called cobol. For them to run the program they need to access it from a different computer using telnet but all the users were not able to access the server. You ave been tasked to solve this problem, what will be your proposed solution? [1]
 - iii. The same, CentOS Server, is running a mail server and users are accessing their email using outlook express configured to use Post Office Protocol (POP3) protocol. All the users are not accessing their emails using outlook. What can be done to solve this problem? hence state one disadvantage of using POP3 in its default state. [3]

*** END OF QUESTION PAPER. GOOD LUCK ***