nAmIBIA UnIVERSITY
OF SCIEnCE AnD TECHnOLOGY

FACULTY OF COMPUTING AND INFORMATICS

DEPARTMENT OF COMPUTER SCIENCE

QUALIFICATION: BACHELOR OF COMPUTER SCIENCE	
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COURSE: SYSTEMS ADMINISTRATION	**COURSE CODE:** SAD622S
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DURATION: 2 HOURS	**MARKS:** 60 (100%)

SECOND OPPORTUNITY/SUPPLEMENTARY EXAMINATION QUESTION PAPER	
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THIS QUESTION PAPER CONSISTS OF 6 PAGES
(Excluding this front page)

INSTRUCTIONS

1. Answer **all questions**.
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.

1. **True or False** [13]

   (a) The **password** command in Linux is used to change/set user password.

   (b) A DNS server is used to translate hostnames to their IP addresses and allocate IP addresses dynamically.

   (c) Linus Torvalds is the creator and lead developer of the Linux kernel.

   (d) You can create a user without a password using the **dsadd** command in Windows Server 2012 domain controller.

   (e) Top level domain can be a country code.

   (f) The symbol **>>** is used to append.

   (g) When promoting your domain controller for the first time, the preferred DNS server will be set to 127.0.0.1.

   (h) **Type 2 hypervisors** can run on top of another operating system.

   (i) In Linux you can use **vi** or **nano** to edit a file.

   (j) After Windows Server 2022, the next server release will be Windows Server 2025.

   (k) Linux kernel is called **ntldr**.

   (l) There are 5 root hint servers.

   (m) The loopback IP address for IPv6 is represented by **::1**.

2. **Multiple Choice**

   i)   All Windows 32 bit applications will be installed in

       a) c:\Program Files   b) c:\Program Files (x86)

       c) c:\Users   d) c:\Windows\System32

   ii) In Windows, which of the following will be used to create a hidden share

       a) $ b) #   c) encrypt   d) hide%

   iii) Which file will be used to store user details and passwords in Windows

       a) SAM   b) passwd   c) shadow   d) User_Pass

   iv) In Linux users passwords are encrypted and stored in

       a) /etc/users/encrypt   b) /etc/shadow

   c) /etc/passwd   d) /etc/encrypt/passwd

v)   After typing **winver** command in Windows, if you get the following output:

Version 22H2 (OS Build 19044.2130)

22H2 means:

    a) 22 Versions   b) 2022 second major update

    c) 4 April 2019   d) 22 February

vi)   Your network contains multiple subnetworks. On one of the subnetworks, you deploy a server named **Subserver1** that runs Windows Server 2012 R2. You install the DNS Server server role on **Subserver1**, and then you create a standard primary zone named example.com. You need to ensure that client computers can resolve IP addresses to hostnames. What should you do first?
        a) Convert the example.com zone to an Active Directory-integrated zone
        b) Create a reverse lookup zone
        c) No need to configure anything. All should work as expected
        d) Configure dynamic updates for example.com
        e) Create a **GlobalNames** zone

vii)   Your network contains an Active Directory domain named **example.com**. The domain contains 10 computer accounts that reside in an organizational unit (OU) named PCS. A Group Policy object (GPO) named GPO1 is linked to PCS. GPO1 is used to assign several user rights to a user named John. In the Users container, you create a new user named James. You need to ensure that James is assigned the same user rights as John on all of the client computers in PCS. What should you do?

a) Modify the settings in GPO1   b) Modify the link of GPO1
c) Move James to PCS
d) Block permission inheritance in all folders under **C:\Users** folder

viii) Your network contains an Active Directory domain named **example.com**. Computer accounts for the marketing department are in an organizational unit (OU) named **Department\Marketing\Computers**. User accounts for the marketing department are in an OU named **Departments\Marketing\Users**. Marketing users can only log on to the client computers in the **Departments\Marketing\Computers** OU. You need to apply an application control policy to all of the marketing users. Which Group Policy Object (GPO) should you configure? Refer to the following screenshot.
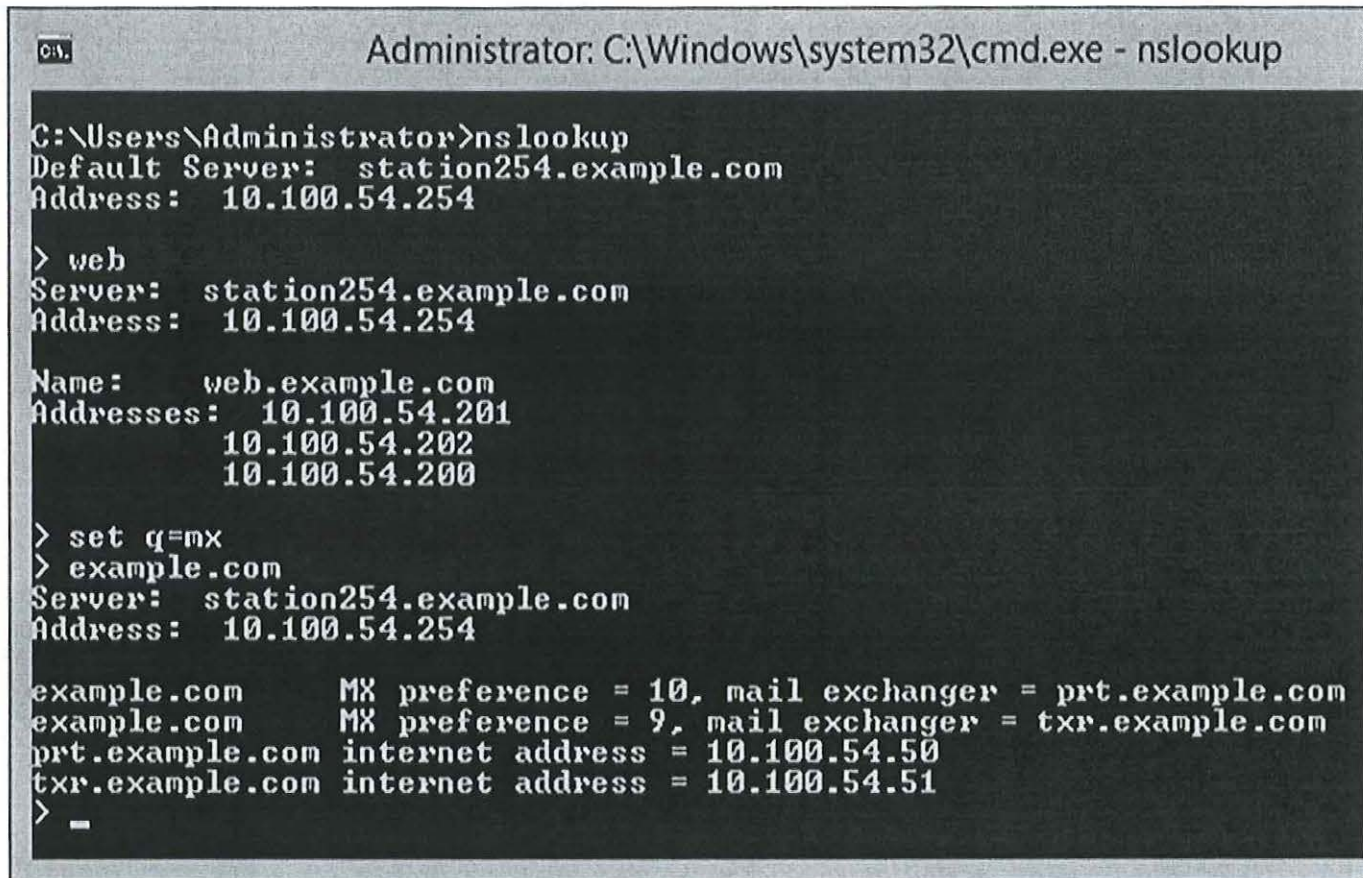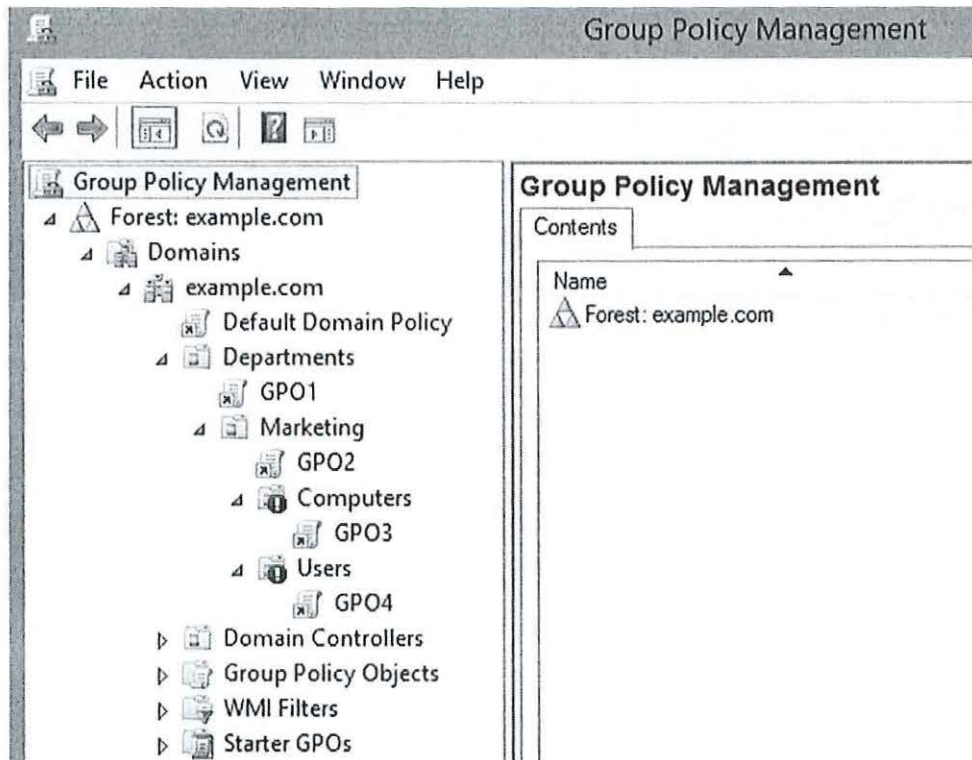

a) GPO1   b) GPO2   c) GPO3   d) GPO4

3   (a) Which term is used to refer to a malicious software which can be inserted into a host/computer to damage or corrupt a system, replicate itself, or deny access to networks, systems, or services?   [1]

(b) When migrating from an old system to a new system, which method is quick and less expensive? State one disadvantage of this method.   [2]

(c) If you are a systems administrator for a company, what measures would you put in place so that the computers within your organization are protected from computer viruses.   [2]

(d) What is a group policy object?   [2]

(e) Explain how a systems administrator uses the **ping** command to test DNS functionalities. Assume the DNS service is running on a machine with the IP: 192.168.0.200.   [2]

(f) What is a kernel?   [1]

(g) Give one reason why an administrator enables lockout policy.   [1]

(h) In Linux, you can use the **ls** command to display objects (files and directories) in your current working directory. The **ls -l** command will list objects giving more detailed information. Below is one line extracted from **ls -l** output.

```
-rw------- 1 root root       1710 Oct 14 01:41 ana
drwxr-xr-x 2 root root       4096 Nov 27  2015 Desktop
-rw-r--r-- 1 root root      38744 Nov 27  2015 inst
-rw-r--r-- 1 root root          0 Oct 14 02:03 sadfolder
drwxr-xr-x 2 will finance   4096 Oct 14 01:50 will
[root@localhost ~]# █
```

i)   How many groups are showing? Name them.   [2]

ii)   How many folders are showing? Name them.   [2]

iii)   By analysing the last line from the output, explain the following section:
        rwxr-xr-x   [3]

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4. (a) Analyse the diagram below and answer the questions which follows. The diagram is a screen shot from a Windows 10 Client machine.

```
Administrator: C:\Windows\system32\cmd.exe - nslookup

C:\Users\Administrator>nslookup
Default Server:  station254.example.com
Address:  10.100.54.254

> web
Server:  station254.example.com
Address:  10.100.54.254

Name:     web.example.com
Addresses:  10.100.54.201
            10.100.54.202
            10.100.54.200

> set q=mx
> example.com
Server:  station254.example.com
Address:  10.100.54.254

example.com      MX preference = 10, mail exchanger = prt.example.com
example.com      MX preference = 9, mail exchanger = txr.example.com
prt.example.com  internet address = 10.100.54.50
txr.example.com  internet address = 10.100.54.51
>
```

(i) Using information shown in the diagram above, what is the fully qualified domain name of the primary DNS server for this client machine. [2]

(ii) How many email servers are responding to example.com domain? List their fully qualified domain names and corresponding IPs [3]

(iii) You have been hired as a consultant to troubleshoot problems existing at **Example cc**. They told you that emails are being delivered to one server and yet they want all emails to be delivered to all available mail servers. What will be your solution to solve this problem? Use only information from the diagram above. [3]

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(iv) Assuming users can access the website for **example cc** by typing **web.example.com**. which server will respond when users type **web.example.com** and why? [*Hint: there are 3 addresses for the same url*]   [2]

(b) As an administrator you can administer active directory running a server 2012 core edition using commands. Identify the error in the following command for adding a user to a domain controller.   [2]

    net   user   sad2025   P@5$w0rd   /add   /carcc.com

(c) Write down the result of the following command which was entered on a machine running active directory. Remember to state the domain which was configured on the active directory: [3]

dsmove "cn=nust,cn=users,dc=ca,dc=eu" -newparent "ou=students,dc=ca,eu"

5. **Linux Commands/Linux**

(i) Write down the command to show all logged in users.   [2]

(ii) Explain the following command:
tail   −20   /etc/passwd | sort > users.txt   [2]

(iii) What will be the problem of entering the following command in Linux: [2]
    useradd -g 100 tomas -p P#Nust234!7

** End of question paper **

Good Lucky