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
DATE: JANUARY 2024		SESSION: 2
DURATION: 2 HOURS		MARKS: 50 (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.
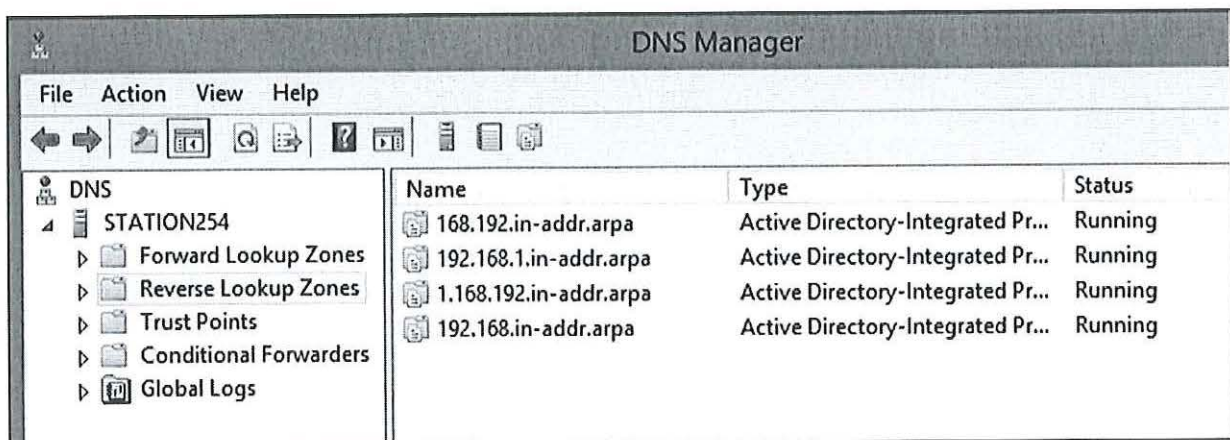
1. **True or False** [5]

    (a) You can create a user without a password using the **dsadd** command in Windows Server 2012/16/19 domain controller.

    (b) RedHat Package Manager is the default package manager for RedHat distributions and Debian distributions.

    (c) Active directory can only be used on a standalone computer.

    (d) The symbol > is used for output redirection.

    (e) The **NS** record in DNS is found in both forward and reverse lookup zone.

2. **Multiple Choice** [5]

i)   In Windows 10/8.1 64bit operating system, 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 symbol will be used to create a hidden share

        a) $ b) #   c) &   d) %

iii)   In Linux users passwords are encrypted and stored in

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

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

iv)   You have a DNS server named DC1. DC1 runs Windows Server 2012/16/19 R2. The network ID is 192.168.1.0/24. An administrator creates several reverse lookup zones as shown below. You need to identify which reverse lookup zone is configured correctly. Which zone should you identify?


DNS Manager			
Name	Type	Status	
168.192.in-addr.arpa	Active Directory-Integrated Pr...	Running	
192.168.1.in-addr.arpa	Active Directory-Integrated Pr...	Running	
1.168.192.in-addr.arpa	Active Directory-Integrated Pr...	Running	
192.168.in-addr.arpa	Active Directory-Integrated Pr...	Running	

a) 192.168.1.in-addr.arpa   b) 192.168.in-addr.arpa

c) 168.192.in-addr.arpa   d) 1.168.192.in-addr.arpa

v)   Your network contains an Active Directory domain named **example.com**. You create an account for a temporary employee named **saduser**. You need to ensure that **saduser** can log on to the domain only between 07:30hrs and 17:30hrs from a client computer named PC1. From which tab should you perform the configuration? Refer to the screenshot below.
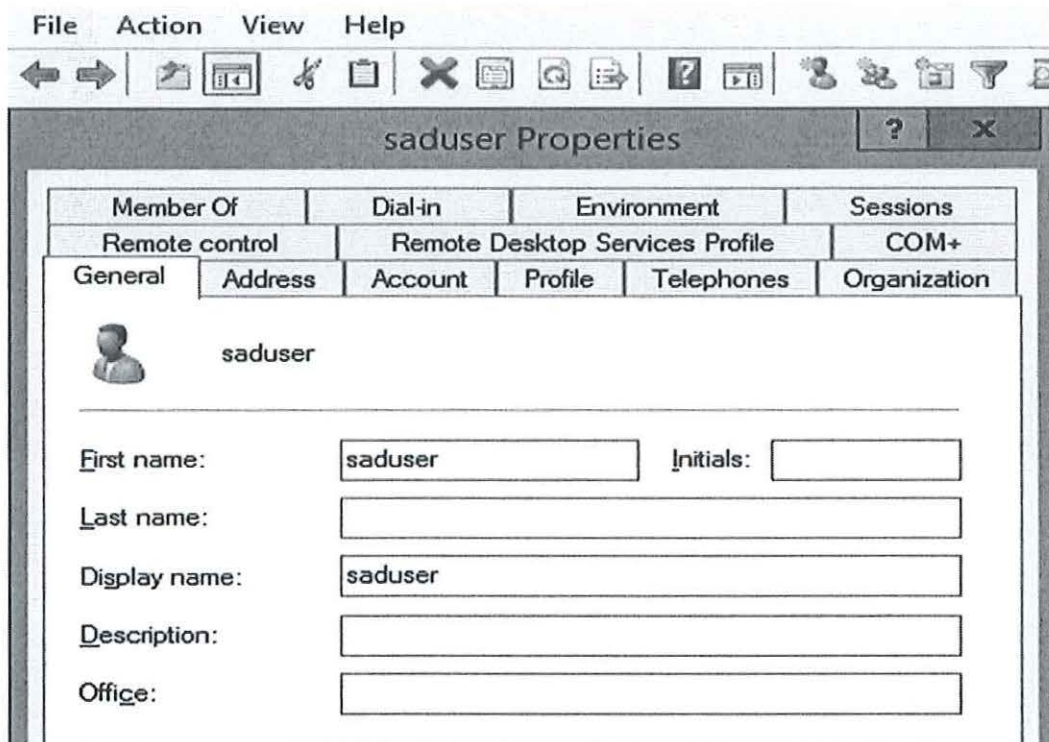
a) Address   b) Environment   c) General   d) Account   e) Profile

3. **Short Questions**

(a) After typing **winver** command in Windows, you get the following output:

`Version 22H1 (OS Build 19045.3447)`

Based on this output, what do you understand by **22H1?** What can you tell the user of this machine to do so that this machine is not vulnerable in the network? [3]

(b) You have been hired by a certain company to rectify Linux login problems for John. Every time John tries to logon he failed to login without any error message. You check his entry in **/etc/passwd** file and it appears as follows:
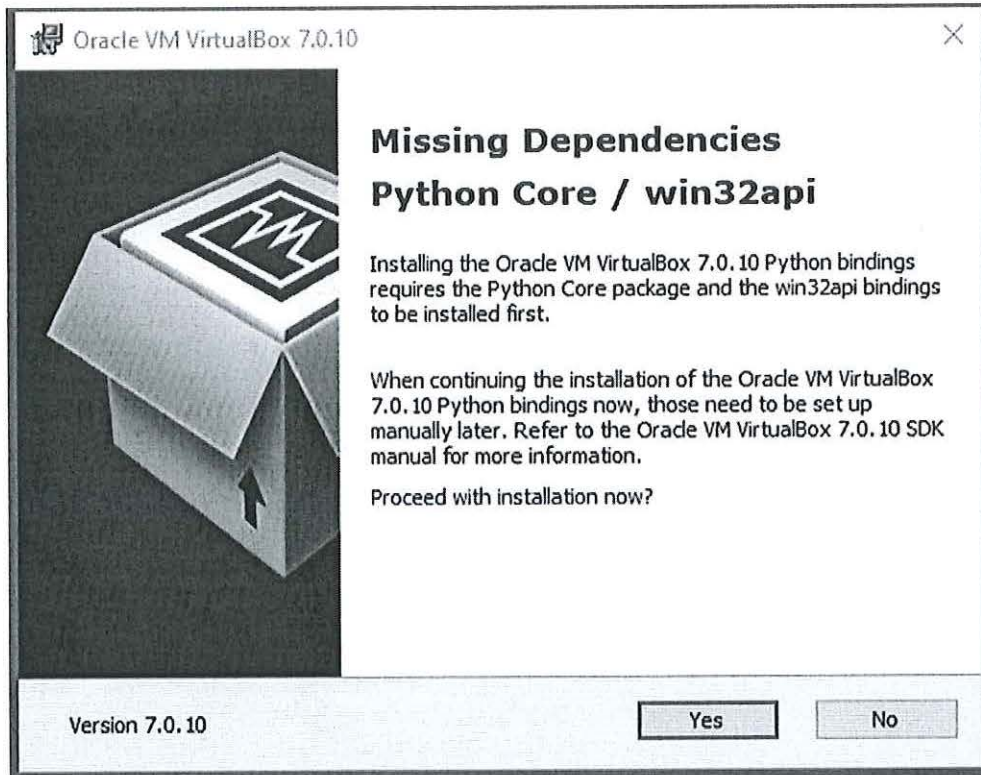
`john:x:537:100:John:/john:/bin/false`

What will be your solution to the above problem? [3]

(c) What is the primary reason for creating an organizational unit (OU)? [1]

(d) What is a shell? Give one example of a shell in Linux. [2]

(e) Refer to diagram below. You are trying to install Oracle VirtualBox 7.0.10 on Windows 10 Professional machine.

(i) What do you understand by positive and negative dependencies? [2]

(ii) Based on the error displayed in the diagram is it a positive or negative dependency? Justify your answer. [2]

(iii) Based on your answer for (ii) state the name of the software(s) which is/are either positive or negative dependency. [2]

4. **Long Questions**
   (a) Analyse the three screenshots below and answer the questions which follow. The screenshots were extracted from CentOS 5 DNS server.

File location: /etc/named.conf

```
options {
        listen-on port 53 { 192.168.0.254; 127.0.0.1; };
        listen-on-v6 port 53 { ::1; };
        directory       "/var/named";
        dump-file       "/var/named/data/cache_dump.db";
    statistics-file "/var/named/data/named_stats.txt";
    memstatistics-file "/var/named/data/named_mem_stats.txt";
        query-source    port 53;
        query-source-v6 port 53;
        allow-query    { localhost; 192.168.0.0/24; };
        allow-query-cache { localhost; 192.168.0.254; }; };
view localhost_resolver {
        match-clients    { localhost; 192.168.0.0/24; };
        match-destinations { localhost; };
        recursion yes;
zone "example.com" IN {
        type master;
        file "reverse.example.zone ";
        allow-update { none; }; };
zone "0.168.192.in-addr.arpa" IN {
        type master;
        file "forward.example.zone ";
        allow-update { none; }; };
include "/etc/named.rfc1912.zones"; };
```

4

```
File location: /var/named/forward.example.zone
$TTL   86400
@     IN    SOA    station254.example.com. mec.station254.example.com. (
*** Some text omitted here
      IN    NS    station254.example.com.
254   IN    PTR    station254.example.com.
253   IN    PTR    site.example.com.
252   IN    PTR    site.example.com.
205   IN    PTR    bigboy.example.com.
200   IN    PTR    mgc.example.com.
201   IN    PTR    tcs.example.com.
```

```
File location: /var/named/reverse.example.zone
$TTL   86400
@                 IN SOA station254  mec.station254.example.com (
                              58          ; serial (d. adams)
                              3H          ; refresh
                              15M         ; retry
                              1W          ; expiry
                              1D )        ; minimum
            IN NS             station254
example.com  MX    10    mgc
example.com  MX    7     tcs
mgc    IN  A  192.168.0.200
tcs    IN  A  192.168.0.201
bigboy IN  A    192.168.0.205
station254 IN  A      192.168.0.254
site    IN  A  192.168.0.253
site    IN  A  192.168.0.252
www    CNAME         bigboy
```

(i) Give one advantage of creating CNAME in your DNS. [1]

(ii) By checking the file **/var/named/reverse.example.zone**, how many changes were made in that zone? [2]

(iii) From the screenshots above we can see that there are 2 IP addresses associated with the host **site**. Assuming that the company's website is hosted on **site**. Which server will respond if clients access the site via the preferred browser? Hence state the advantage of having one name associated with 2 IP addresses. [4]

5

(iv) You have been hired as email server specialist to resolve email problems. Use the screenshots above to answer these questions.

(a) which email address will be used to send DNS related errors? [2]

(b) Which server is the preferred email server? [1]

(c) How can you set the other server as the preferred mail server? [2]

(v) If the client machine accesses the url: http://www.example.com or http://www, what is the name of the machine with the resources which will be displayed? [2]

(vi) A user typed **station254.example.com** on the browser, which zone will be used to resolve this url? [1]

(vii)   Considering the administrator installed bind-chroot application, what will be the advantage of using this application? [2]

5. Linux Commands/Linux

(i) Write down the command to change the system time to 17:35hrs. [2]

(ii) Explain the following command:
`touch file{1,2,3}` [2]

(iii) write down the command to change the group of the file1 created in step (ii) to group3. Assume group3 was created already. [2]

(iv) Explain the following command. (Assume testsed is a file)

```
chown     road.b1     testsed
```
[2]

End of question paper