



**PAMIBIA UNIVERSITY**  
OF SCIENCE AND TECHNOLOGY

**FACULTY OF COMPUTING AND INFORMATICS**

**DEPARTMENT OF COMPUTER SCIENCE**

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| <b>QUALIFICATION:</b> BACHELOR OF COMPUTER SCIENCE        |                             |
| <b>QUALIFICATION CODE:</b> 07BACS, 07BCCS, 07BCCY, 07BCMS | <b>LEVEL:</b> 6             |
| <b>COURSE:</b> SYSTEMS ADMINISTRATION                     | <b>COURSE CODE:</b> SAD622S |
| <b>DATE:</b> NOVEMBER 2023                                | <b>SESSION:</b> 1           |
| <b>DURATION:</b> 2 HOURS                                  | <b>MARKS:</b> 50 (100%)     |

| <b>FIRST OPPORTUNITY EXAMINATION QUESTION PAPER</b> |  |
|---|--|
| <b>EXAMINER(S)</b>                                  | MR. SHADRECK CHITAURO<br>MS. ALBERTINA SHILONGO<br>MS. NDESHIHAFELA KAKWAMBI<br>MS. LINEEKELA SHSHIVENI<br>MS. HELENA HAINANA<br>MS. TALENI ANDJAMBA |
| <b>MODERATOR:</b>                                   | MR. ISAAC NHAMU  |

**THIS QUESTION PAPER CONSISTS OF 5 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) Hyper-V provides services and management tools for creating and running virtual machines and their resources.
- (b) Windows Server 2012/16/19 standard edition support up to 4 terabytes (TB) of RAM while Windows Server 2012/16/19 enterprise edition support more than 4 terabytes (TB) of RAM.
- (c) An IP address is composed of network portion and host portion.
- (d) For a worm to spread and affect other computers in a network, a user must copy it from one machine to another until all are infected.
- (e) Two machines in different networks are able to communicate without a layer 3 device.

2. Multiple Choice

[8]

- i) When configuring Windows Server 2012/16/19 as a domain controller and enter **example.com** as the **Root domain name**. Which answer shows that the default NetBIOS name is the same as the server name (hostname).
  - a) example0
  - b) netbios name conflict
  - c) netbios duplicate
  - d) server name duplicate
- ii) Which file will be used to store user details and passwords in Windows
  - a) SAM
  - b) passwd
  - c) shadow
  - d) User\_Pass
- iii) Which command was used to get the following screenshot?

```
Stopping httpd: [ OK ]
Starting httpd: [ OK ]
[root@localhost RPMS]#
```

- a) Start httpd
  - b) service httpd start
  - c) service httpd restart
  - d) restart httpd
- iv) What is the purpose of the following Windows command typed in Windows Server 2012/16/19? Select the best answer: **dir > errors.txt**
    - a) display the contents of **errors.txt** file
    - b) create the file **errors.txt**
    - c) captures all errors after the **dir** command
    - d) to list all files in the current location

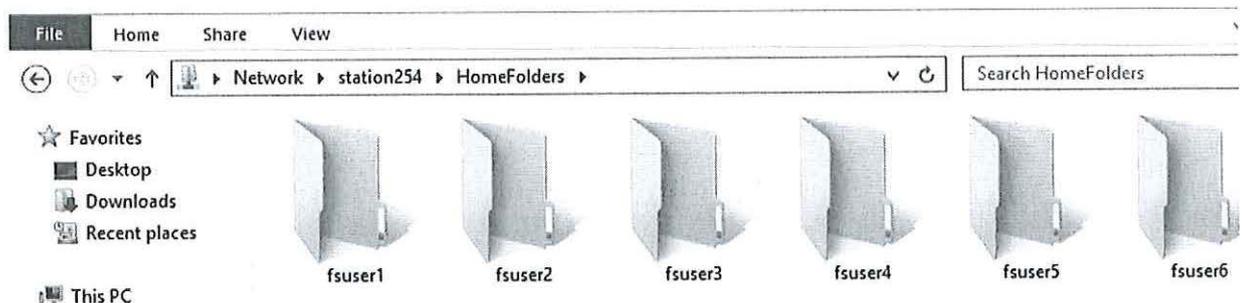
- v) Study the following diagram extracted from Windows Server 2012/16/19 Server Core.

```
C:\Documents and Settings\Administrator>dsquery user
"CN=Administrator,CN=Users,DC=ced,DC=ac,DC=na"
"CN=Guest,CN=Users,DC=ced,DC=ac,DC=na"
"CN=SUPPORT_388945a0,CN=Users,DC=ced,DC=ac,DC=na"
"CN=krbtgt,CN=Users,DC=ced,DC=ac,DC=na"

C:\Documents and Settings\Administrator>
```

Select the default container where all the accounts shown above are stored.

- a) Administrator      b) ac      c) Users      d) na  
 e) ced      f) krbtgt
- vi) Your network contains an Active Directory domain named example.com. The domain contains a file server named station254 that runs Windows Server 2012/16/19 R2. Station254 contains a shared folder named **HomeFolders** as shown below. **HomeFolders** contains the home folder for each user. All users have the necessary permissions to access only their home folder. A user named fsuser3 opens the **HomeFolders** share as shown below. You need to ensure that all users see only their own home folder when they access **HomeFolders**. What should you do from station254?



- a) From Server Manager, modify the properties of **HomeFolders**  
 b) From Windows Explorer, modify the properties of **HomeFolders**  
 c) From Server Manager, modify the properties of the volume that contains **HomeFolders**  
 d) From Windows Explorer, modify the properties of the volume that contains **HomeFolders**  
 e) No configuration needed
- vii) Which of the following Linux installation commands will not resolve dependencies automatically? (**Select two**)  
 a) yum      b) rpm      c) install-get      d) apt      e) dpkg

### 3. Short Questions

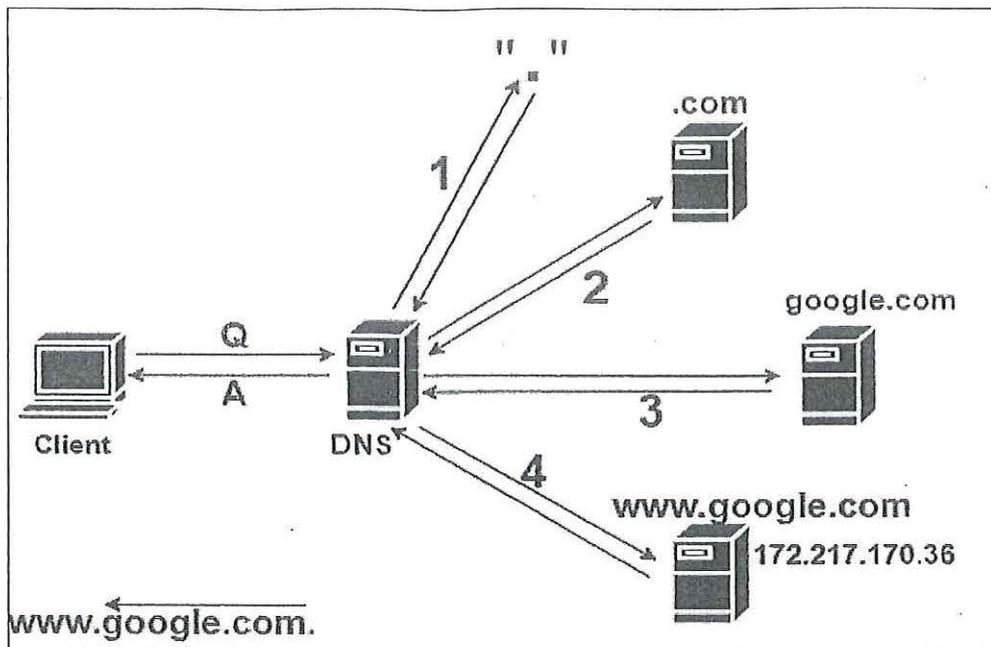
- (a) What do you understand by Global Catalog server in Windows Server 2012/16/19 Active Directory? [2]
- (b) Which two ways can group policy objects be created from? [4]
- (c) Explain how a systems administrator uses the ping command to test DNS functionalities. Given 192.168.20.254 as the IP address of the DNS server. [2]
- (d) State two locations in your Windows 2012/16/19 Active Directory where you can create an Organizational Unit(OU). [2]
- (e) You have been hired by a certain company to rectify a Linux login problem for John. Every time John tries to logon he get "*permission denied error*". You checked his entry in `/etc/passwd` file and it appears as follows:

```
john:x:537:100:John:/root:/bin/ash
```

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

#### 4. Long Questions

- (a) Analyse the following diagram and the screenshot below and answer the questions which follows. The screenshot below the diagram shows some configurations for the DNS in the diagram.



```
>set q=soa 65 changes
unrecognised command: set q=soa 65 changes
>contoso.com
Server:      server254.contoso.com
Address:     192.168.20.254
contoso.com
  primary name server = server254.contoso.com
  responsible person = prim.contoso.com
  serial = 18
  refresh = 900 (15 mins)
  retry = 600 (10 mins)
  expire = 86400 (1 day)
  default TTL = 3600 (1 hour)
server254.contoso.com  internet address = 192.168.20.254
```

- i) What do you understand by DNS recursive and iterative lookup process? [4]
- ii) From the diagram above in step 1 where the arrow points to "." and from ".", what is the meaning of "." and how many objects are referred to by the "."? [3]
- iii) Using information shown in the diagram above, write down the email address which will be used in case the DNS service experience problems. [2]
- iv) Any change you make in your zone records will be recorded. Based on the information given above, how many changes were made to zone record? [2]
- v) If a client machine in the diagram above resolves www.google.com through the DNS server shown above. Considering that the client did not access www.google.com in the next 30 hours. What will be the lifetime for records in the client's cache? [2]
- vi) Give one record type which you can find in reverse lookup zone. [1]

5. As an administrator you can administer active directory running a server 2012/16/19 core edition using commands. Identify the error in the following command for adding a user to a domain controller active directory and users. [2]

```
net user sad622s Pa%$w0rd /add /contoso.com
```

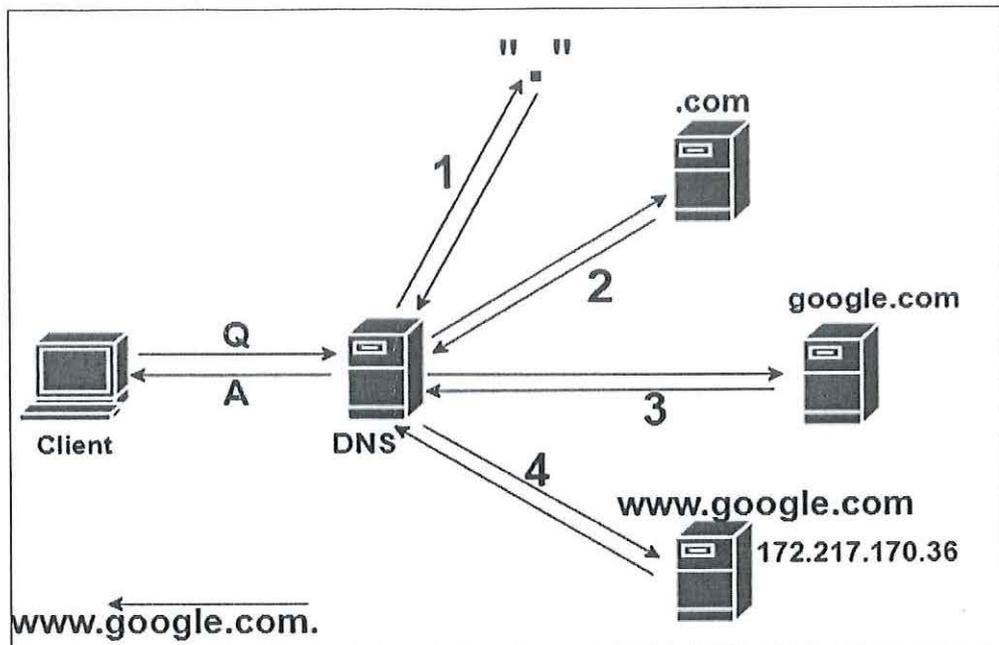
6. **Unix Commands**

- i. Write the command to create a file called **sadtest** in **/tmp** folder [1]
- ii. Write down the command to change the file permission created in i. above to **group=rw-; owner=rwx; others=r--** [3]
- iii. Change the owner of the file created in i. to maria [2]
- iv. What will be the problem of entering the following command in Linux: [2]  
**useradd -g 700 james -p test5**

**End of question paper**

#### 4. Long Questions

- (a) Analyse the following diagram and the screenshot below and answer the questions which follows. The screenshot below the diagram shows some configurations for the DNS in the diagram.



```
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contoso.com
  primary name server = server254.contoso.com
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  retry = 600 (10 mins)
  expire = 86400 (1 day)
  default TTL = 3600 (1 hour)
server254.contoso.com  internet address = 192.168.20.254
```