



kasneb

CICT PART II SECTION 4

DATA COMMUNICATION AND COMPUTER NETWORKS - PRACTICAL

FRIDAY: 21 May 2021.

Time Allowed: 3 hours.

Answer ALL questions. Marks allocated to each question are shown at the end of the question.

You are provided with the following items:

1. One flash disk.
2. Printing materials.
3. Two standalone personal computers.
4. Three CAT 5/6 Ethernet straight through cables terminated with RJ-45.
5. One Ethernet switch.
6. A printer.

Additional instructions:

- (a) Save all your work (including typed answers to the theory questions where applicable) in the flash disk provided and in a folder bearing your registration number.
- (b) Work on each question should be saved in the subfolder contained in the folder created in instruction (a) above. The name of the subfolder should correspond to the question number.
- (c) Your registration number MUST appear as a header on every printout containing your work.
- (d) You must also indicate the number of the question answered on the header created in instruction (c) above.

Note: The information in instructions (a) to (d) above must be computer generated.

At the end of the examination duration, you should hand in to the invigilator(s):

- (i) The flash disk containing your work.
- (ii) ALL printed work.
- (iii) ALL unused printing paper(s).

QUESTION ONE

Create a word processor document named "Question One". Use the word processor document to save the solutions and screenshots captured in the following questions:

- (a) Use the equipment provided to set up a network. Configure the computers with static IP configurations and assign the computer names as provided in the table. Name the workgroup "SALESTEAM".

	PC1	PC2
PC NAME	LENANA	BATIAN
IP Address	192.168.1.200	192.168.1.1
Subnet Mask	255.255.255.0	255.255.255.0
Default Gateway	192.168.1.1	192.168.1.1

(6 marks)

- (b) While using Lenana, use the appropriate commands to:

- (i) Test connectivity between the two computers. (2 marks)
- (ii) Display MAC-address for both computers. (2 marks)
- (iii) Interrupt and quit sending messages. (2 marks)

- (c) Capture and save a screenshot showing the packets activity from one of the computers. (2 marks)
  - (d) Distinguish between “connectionless” and “connection-oriented” data transfer methods. (4 marks)
  - (e) Highlight two primary functions of a router. (2 marks)
- (Total: 20 marks)**

**QUESTION TWO**

Create a word processor document named “Question Two”. Use the word processor document to save the solutions and screenshots captured in the following questions:

- (a) Use Lenana to do the following:
    - (i) Change the account lockout threshold to allow two invalid logon attempts. (2 marks)
    - (ii) Create permission for the user to change the network name, location or icon. (2 marks)
    - (iii) Allow encryption of the user’s document folder using encrypting file system. (2 marks)
  - (b) Use the appropriate facility to show the various startup items together with their details of Batian Computer.
 

Capture a screenshot showing these startup items. (3 marks)
  - (c) Using Lenana, create a folder called “Shared1” on the desktop and share it with everyone with only the permission to read.
 

Capture and save the screenshots. (3 marks)
  - (d) Using Batian, use the control panel to capture a screenshot showing the indexing option. (2 marks)
  - (e) Describe the following concepts as used in data transmission:
    - (i) Data rate. (2 marks)
    - (ii) Bandwidth. (2 marks)
    - (iii) Noise. (2 marks)
- (Total: 20 marks)**

**QUESTION THREE**

Create a word processor document named “Question Three”. Use the word processor document to save screenshots captured in the following questions:

- (a) Using Lenana, enable the following properties on your network adapter:
  - (i) Priority and VLAN. (2 marks)
  - (ii) TCP Checksum Offload (IPv4). (2 marks)

Capture and save screenshots showing the steps taken.
- (b) Configure one of your computers to allow remote desktop connection. Use the other computer to demonstrate the step by step procedure for remote desktop connection.
 

Capture and save the screenshots for all the steps taken. (6 marks)
- (c) Trace the route it takes for a packet to reach Batian from Lenana.
 

Capture a screenshot for this. (2 marks)
- (d) Capture and save the screenshot to display all the shared folders in Lenana. (2 marks)

- (e) Describe the infrared technology as used in data communication and computer networks. (2 marks)
- (f) Compare analogue and digital signals using representation and description criteria. (4 marks)

**(Total: 20 marks)**

**QUESTION FOUR**

Create a word processor document named "Question Four". Use the word processor document to save the solutions and screenshots captured in the following questions:

- (a) Change the audit policy properties of the following to success for Batian:
  - (i) Audit account management.
  - (ii) Audit account logon events.
 Capture appropriate screenshots. (4 marks)
- (b) (i) Create a user called "Zoma" on computer named "Lenana". Set a default password "password" and let him change the password to his preferred password during the next logon.
   
Capture and save the screenshots. (3 marks)
   
(ii) Add a user Zoma to backup operators group.
   
Capture and save the screenshots showing the steps taken. (3 marks)
- (c) File history is a component in Windows operating system that allows one to have copies of files in case they get damaged.
   
Using Lenana, capture the screenshot showing only the file history backup log events. (4 marks)
- (d) Explain two types of servers that could be implemented in a network. (4 marks)
- (e) Justify the need to calibrate a networked printer. (2 marks).

**(Total: 20 marks)**

**QUESTION FIVE**

Create a word processor document named "Question Five". Use the word processor document to save the solutions and screenshots captured in the following questions:

- (a) Using Batian computer:
  - (i) Configure proxy selections and bypass settings. (3 marks)
  - (ii) Add exceptions on the addresses that the proxy server should not use. (2 marks)
 Capture and save screenshots displaying the steps undertaken.
- (b) Create a system image for computer named "Lenana" without starting the actual backup.
   
Capture and save the screenshots. (3 marks)
- (c) Share the default printer using the share name "Data Com Proc Printer".
   
Capture a screenshot to show how this is done. (3 marks)
- (d) Illustrate how to add or remove windows firewall exception to allow or disallow an existing exception to programs. (3 marks)
- (e) Explain two ways in which internet of things (ToT) is solving challenges for smart cities. (4 marks)
- (f) Distinguish between WLAN and PAN. (2 marks)

**(Total: 20 marks)**

.....