PAN AFRICA CHRISTIAN UNIVERSITY

BACHELORS OF INFORMATION COMMUNICATION TECHNOLOGY

END OF TERM EXAMINATION

DEPARTMENT: **COMPUTING & INFORMATION TECHNOLOGY**

COURSE CODE: **BITBSIT205**

CAMPUS: **ROYSAMBU**

COURSE TITLE: **DATA COMMUNICATIONS & NETWORKS**

EXAM DATE: **Friday 11-2 PM**

TIME:

INSTRUCTIONS

- This exam carries a total of SIX Questions of [10 Marks Each]
- Section One (I) is compulsory.
- Answer any 3(Three) Questions from Section Two (II)
- Read all questions carefully before attempting.

Section One Compulsory 10 marks

Question 1.

a) As an Expert of Network security, you have been supplied with the Forensic tools listed below, Demonstrate the working and achievements you would obtain deploying them on your entire network.

   i. Mega Ping. **[2 marks]**

   ii. Wireshark **[2 marks]**

b) For an effective network management and operations, A network administrator has to consider various elements of effective network security. Illustrate how you shall use the following to reinforce and manage packets across any Network

   i. Policy Management. **[2 marks]**

   ii. Network Identity. **[2 marks]**

   iii. Perimeter security. **[2 marks]**

   iv. Data Privacy. **[2 marks]**

c) How would you carry out Port scanning as opposed to Network scanning. **[2 marks].**

Section Two Attempt any Three Questions.

Question 2.

a) Horizon Technology has been awarded a tender to deploy a wireless network in County offices and its environs, Analyze FOUR major challenges associated with the selected type of Network infrastructure Implementations and how they can overcome them.

   [4 marks]

b) Analyze the appropriate remedies for the following network bottlenecks.

   i. Crosstalk. **[2 marks]**

   ii. Attenuations. **[2 marks]**

d) Discuss the following network characteristics are used in assessing most network operations.

   i. Performance **[1 mark]**

   ii. Reliability. **[1 mark]**

Question 3.

a) Discuss giving example TWO data transmission modes. **[4 marks]**

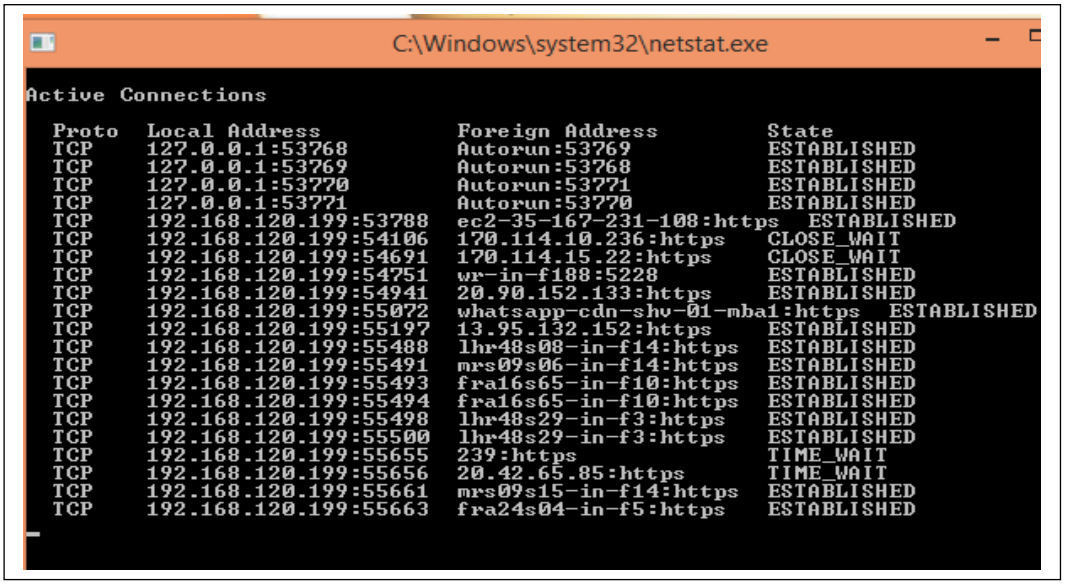
b) Illustrate as an upcoming Network Security expert, how you will use the following tools with the their outcome.

i. Network topology mapper. **[4 marks]**

ii. Friendly Pinger. **[2 marks]**

Question 4.

a) Below is a screenshot obtained from a network troubleshooting exercise. Discuss and give the objectives of the experiment**.** **[3 marks]**



c) Denial of service and Distributed Denial of service is one of the most common attacks experienced across any given network. With aid of a well labeled diagram show how an attacker can successfully handle and take control of a given Network.

[3 marks].

d) Musalia was to assigned tasks to troubleshoot student's lab network, identify the structured Steps to follow in troubleshooting the entire network. **[4 marks]**

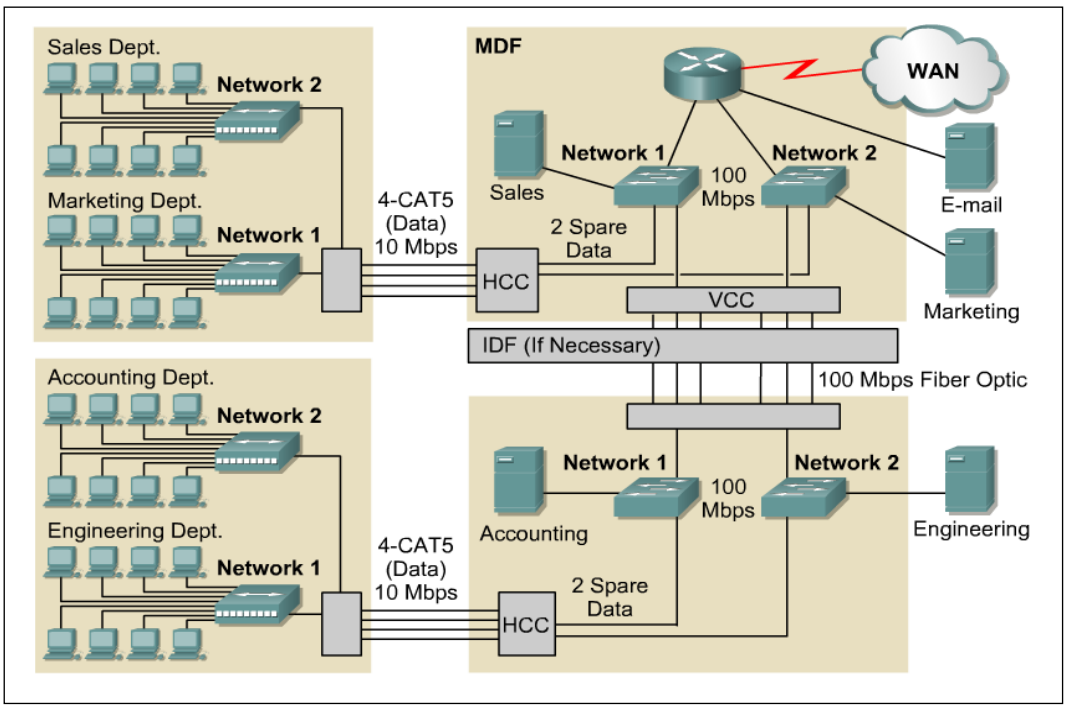
Question 5.

Discuss when and how you would use the following troubleshooting commands.

i. ifconfig. **[2 marks]**
ii. ping (ip/domain/computer name) -t **[2 marks]**
iii. nslookup **[2 marks]**
iv. Netstat **[2 marks]**
v. Tracert. **[2 marks]**

Question 6.

a) Study the diagram shown below then debate the concepts arising therein.



i. MDF **[2 marks]**
ii. HCC **[2 marks]**
iii. VCC **[2 marks]**

b) With aid of a well labeled diagram explain how you would terminate Straight through UTP or STP copper cable using *ANSI/TIA/EIA-568-B,* standards. **[4 marks].**

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