



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF INFORMATICS AND INNOVATIVE SYSTEMS

**UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR INFORMATION
COMMUNICATION TECHNOLOGY**

4th YEAR 1st SEMESTER 2022/2023 ACADEMIC YEAR

MAIN CAMPUS

COURSE CODE: ITB1403

COURSE TITLE: Advanced Network Management

EXAM VENUE:

STREAM:

DATE:

EXAM SESSION:

TIME: 2.00 HOURS

INSTRUCTIONS:

- 1. Answer Question 1 (Compulsory) and ANY other two questions**
- 2. Candidates are advised not to write on the question paper**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room**

QUESTION TWO. (30 Marks)

- a) Briefly explain the three roles associated with the transport layer of the OSI Model **(3marks)**
- b) Briefly explain the three roles associated with the transport layer of the OSI Model **(3marks)**
- c) Distinguish between static and dynamic routing? **(2marks)**
- d) What do you understand by UDP and TCP give an example as to when would use the two respectively? **(4marks)**
- e) Distinguish Media Layer and Host layer **(2marks)**
- f) What is baseline in network management **(2marks)**
- g) How often would you conduct a baseline? **(2marks)**
- h) Because of a recent security breach, you have been asked to design a security strategy that will allow data to travel encrypted through both the Internet and intranet. Which solution and protocols would you use? **(4marks)**
- i) Having a well-documented network offers a number of advantages briefly highlight two of these advantages **(2marks)**
- j) Briefly explain some of the types of information and functions that network management tools can provide **(4marks)**
- k) How is crosstalk minimized in twisted-pair cabling? **(1Mark)**
- l) When a signal moves through any medium, the medium itself will degrade the signal. What is this called? **(1Mark)**

QUESTION TWO. (20 Marks)

- a) There are several ways to manage traffic on your network to speed up access and in some cases guarantee available bandwidth to applications briefly state and explain them. **(10marks)**
- b) Your organization has been having challenges in terms of troubleshooting and diagnosing network problems this is partly due to lack of network diagrams documentation you have been requested to document the network diagram briefly explain the categories of diagrams you would have for this exercise and what is documented within them. **(6marks)**
- c) Briefly explain two defenses of against packet sniffers in your organization **(4marks)**

QUESTION THREE. (20 Marks)

- a) In relation to management of network device problems briefly explain some of challenges that would necessitate escalation in terms of finding a solution **(10marks)**
- b) What cable issues should you know and understand for network troubleshooting? **(10 marks)**

QUESTION FOUR. (20 Marks)

- a) When trouble shooting challenges with Network cables what are some of the cable issues that can be identified **(10 Marks)**
- b) Assume you are an attacker state and explain five steps that you would use to conduct an attack on a network scenario **(10 marks)**

QUESTION FIVE. (20 Marks)

- a) All networks differ and so does the documentation required for each network. However, certain elements are always included in quality documentation briefly explain five of these elements **(10 marks)**
- b) Having a well-documented network offers a number of advantages briefly highlight three of these advantages **(3mark)**
- c) Briefly explain some of the types of information and functions that network management tools can provide **(4mark)**
- d) State the three distinct types of tests that network administrators use for testing networks **(3mark)**