



UNIVERSITY EXAMINATIONS

FIRST YEAR EXAMINATION FOR THE AWARD OF CERTIFICATE IN COMPUTER SCIENCE

COSC 00171: COMPUTER NETWORKS AND THE INTERNET

STREAMS: CERT COMP SCI YISI

TIME: 2 HOURS

DAY/DATE:
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INSTRUCTIONS:

- Answer question **ONE** and **TWO** other questions
- Do not write anything on the question paper
- This is a **closed book exam**, No reference materials are allowed in the examination room
- There will be **NO** use of mobile phones or any other unauthorized materials
- Write your answers legibly and use your time wisely.
- Marks are awarded for clear and concise answers.

SECTION A (Answer ALL questions in this section)

QUESTION ONE (30 Marks)

- a. List THREE disadvantages of wired network [3Marks]
- b. Discuss the advantages of ring topology [3Marks]
- c. Define the following terms
 - i. Data communication [2Marks]
 - ii. Internet [2Marks]
 - iii. Firewall [2Marks]
 - iv. Worm [2Marks]
- d. Discuss the following computer network components
 - a. Network Card Interface [3Marks]
 - b. Switch [3Marks]
- e. List THREE advantages of computer network [3Marks]
- f. Transmission medium can either be guided or unguided, name FOUR guided transmission medium used in data communication [4 marks]

- g. Briefly discuss the TCP/IP model [3Marks]

SECTION B (Answer any TWO questions)

QUESTION TWO (20 Marks)

- a.) Discuss FOUR measures to be put in place to ensure network security [8Marks]
- b.) Chronologically list the SEVEN layers of OSI model [7Marks]
- c.) List the FOUR basic types of transmissions standards for wireless network [5Marks]

QUESTION THREE (20 Marks)

- a.) Differentiate simplex, half duplex and full duplex modes of data communication. [6Marks]
- b.) Discuss FIVE communication protocols used in OSI model layers. [10Marks]
- c.) Discuss TWO disadvantages of internet in the society [4Marks]

QUESTION FOUR (20 Marks)

- a. Discuss the THREE types of computer network. [10Marks]
- b. Discuss ETHERNET computer networking technology [5Marks]
- c. List FIVE ways to prevent your laptop from being infected by a virus [5Marks]

QUESTION FIVE (20 Marks)

- a) With an aid of diagrams, describe FOUR major Local Area Network (LAN) topologies. [12Marks]
- b) Jane, a network engineer has been hired by Wangomb'e Sacco to setup a Local Area Network in their office. Discuss FOUR factors she should consider when choosing the right topology to use. [8Marks]
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