MURANG'A UNIVERSITY OF TECHNOLOGY

SCHOOL OF COMPUTING AND INFORMATION TECHNOLOGY

DEPARTMENT OF INFORMATION TECHNOLOGY

TVET EXAMINATION

2023/2024 ACADEMIC YEAR

FIRST YEAR **SECOND** SEMESTER EXAMINATION FOR DIPLOMA IN ICT (TVET)

IT/CU/ICT/CR/1/6 - PERFORM COMPUTER NETWORKING

DURATION: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

1. Answer question one and any other two questions.

2. Mobile phones are not allowed in the examination room.

3. You are not allowed to write on this examination question paper.

SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION

QUESTION ONE (30 MARKS)

a) Define the following terms as used in networking. (10 marks)

     i.   Network design

    ii.   Data communication

    iii.   Network protocol

    iv.   Bandwidth

    v.   Signalling

b) Explain any three (3) data communication components. (6 marks)

c) Discuss the three types of data flow in a transmission media using a diagram to explain.

(6 marks)

d) Distinguish between packet switching and circuit switching. (6 marks)

e) State the two major security threats perceived by users of a computer based system.

(2 marks)

SECTION B – ANSWER ANY TWO QUESTIONS IN THIS SECTION

QUESTION TWO (20 MARKS)

a) Discuss the four factors that affects the performance of a network. (12 marks)

b) With the aid of a well labelled diagram, discuss the layers of the TCP/IP reference model.

(8 marks)

QUESTION THREE (20 MARKS)

a) With the aid of a diagram, distinguish between hierarchical and flat model network designs.
(12 marks)

b) Explain the four fundamental goals of designing a network. (8 marks)

QUESTION FOUR (20 MARKS)

a) Explain the advantage of synchronous over asynchronous communication. (4 marks)

b) With the aid of diagram, discuss any three types of network topologies. (8 marks)

c) Elucidate the four functions of the physical layer of an OSI model. (8 marks)