MURANG'A UNIVERSITY OF TECHNOLOGY

SCHOOL OF COMPUTING AND INFORMATION TECHNOLOGY

DEPARTMENT OF INFORMATION TECHNOLOGY

UNIVERSITY ORDINARY EXAMINATION

2020/2021 ACADEMIC YEAR

SECOND YEAR **FIRST** SEMESTER EXAMINATION FOR DIPLOMA IN INFORMATION TECHNOLOGY

SIT 056– FUNDAMENTALS OF COMPUTER NETWORKS

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 computer networking (6marks)

(i) Computer Networks
(ii) Network server
(iii) Workstation
(iv) Data signal
(v) Computer Network Topology
(vi) Network protocol

b) List any four non- computer networks depicted in real-world scenario (4marks)

c) Distinguish between logical and physical network topologies, giving examples in each case. (4marks)

d) Identify any two main features of network server (2marks)

e) Why is a switch preferred to a Hub on the network? (3marks)

f) Using well labelled diagrams, differentiate between the two types of data signal (4marks)

g) Explain the "line of slight principle" in wireless communication (3marks)

h) What is attenuation and how can it be handled in networking? (2marks)

i) What is the function of a Bridge on a network (2marks)

SECTION B – ANSWER ANY TWO QUESTIONS IN THIS SECTION

QUESTION TWO (20 MARKS)

a) Outline the seven open systems interconnection (OSI) reference model layers (7marks)

b) List any three types of network models (3marks)

c) Explain the 4 major types of bounded transmission media (8marks)

d) State two advantages of satellite communication (2marks)

QUESTION THREE (20 MARKS)

a) Discuss the 3 modes of data communication (9marks)

b) What is \EEE as used in networking? (1mark)

c) Describe at least five devices used in data communication (10marks)

QUESTION FOUR (20 MARKS)

a) Using a real life scenario, differentiate between multiplexing and de-multiplexing (4marks)

b) Using appropriate diagrams, describe any three types of physical network topologies (6marks)

c) Explain the three most common types of computer networks in the use today (6marks)

d) Highlight any four factors to consider when selecting a data transmission system (4marks)