



**MASINDEMULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)
MAIN CAMPUS**

**UNIVERSITY EXAMINATIONS
2022/2023 ACADEMIC YEAR
SEMESTER TWO EXAMINATIONS
FOR THE DIPLOMA
IN
INFORMATION TECHNOLOGY**

COURSE CODE: DIT 060

COURSE TITLE: DATA COMMUNICATION

DATE: 17/04/2023

TIME: 8:00-9:30AM

INSTRUCTIONS TO CANDIDATES

Answer **Question ONE (1)** and any other **TWO**

TIME: 1 Hour 30 Minutes

MMUST observes **ZERO** tolerance to examination cheating
This Paper Consists of 2 Printed Pages. Please Turn Over.

Section A :Answer all questions from this section

Question one (24MKS)

- a) Describe any THREE network devices and their function (3 marks)
- b) Describe any two disadvantages of VSAT transmission (4 marks)
- c) Briefly explain the following types of packet transmission
 - (i) Broadcast
 - (ii) Unicast
 - (iii) Multicast (6 marks)
- d) Differentiate between an open and closed network system (2marks)
- e) Explain HTTP (2marks)
- f) Differentiate between half and full duplex (2marks)
- g) Explain any TWO factors to consider when choosing transmission media (2marks)
- h) State any Three network classes indicating their address ranges and mask (3Marks)

Section B:Answer any two questions from this section

Question Two (18 mks)

- a) Discuss the Five unique identifiers of a network (10 marks)
- b) Explain P2P file sharing and discuss the three architectures of P2P (8 marks)

Question Three (18 mks)

- a) Explain LAN, WAN, MAN, VPN and Intranet (10 marks)
- b) Using diagrams explain the network topologies (8 marks)

Question Four (18 mks)

- a) An organization has three buildings A, B and C which need to be interconnected
Distance between them is 80M, 150M and 180M respectively. The buildings require 120Mbps, 2000Mbps and 150Mbps respectively. The organization has 300M roll of UTP Cat 6 cable, 190M of fiber cable and two wireless access point of effective distance of 1KM. There is dense tree cover between building B and C. As a network engineer explain giving reasons to which communications medium you will use to interconnect all the three buildings (18MKS)

Question Five (18 mks)

- a) Discuss the OSI model indicating what each layer does (12 marks)
- b) Explain the TCP 3-way handshake (3 marks)
- c) Explain any THREE protocols in the application layer of the OSI (3 marks)