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(TheUniversity of Choice)

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

UNIVERSITY EXAMINATIONS

MAIN CAMPUS

2021/2022 ACADEMIC YEAR

FOURTH YEAR FIRST SEMESTER EXAMINATIONS

FOR THE DEGREE OF BACHELOR OF SCIENCE (COMPUTER SCIENCE) BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY)

COURSE CODE: **BCS 471E**

COURSE TITLE: **NETWORK PROTOCOLS & STANDARDS**

DATE: MONDAY 1-08-2022 **TIME:** 2:00P.M-4:00P.M

INSTRUCTIONS TO CANDIDATES

Answer questions ONE and any other TWO questions.

TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over.

QUESTION ONE (30 MARKS)-COMPULSORY

a) Illustrate the fundamental difference between a Standard and a Protocol. (4 marks)

b) Ethernet and WiFi are examples of link-layer protocols. Distinguish them. (4 marks)

c) What is the function of an IP Address? (6 marks)

d) Briefly explain TWO key areas of functionality for ICMP giving an example. (4 marks)

e) Provide an illustration of how HTTP and FTP are related. (6 marks)

f) What is the role of the transport layer in the TCP/IP protocol stack? (6 marks)

QUESTION TWO (20 MARKS)

a) Explain how the following terms are related: peers, IDU, SDU and PDU. (8 marks)

b) TCP and UDP are two well known data transport protocols provided by the Internet Transport Layer. Provide a brief description of each service and indicate what type of application might use that service. (12 marks)

QUESTION THREE (20 MARKS)

a) Contrast the OSI 7-layer model with the TCP/IP reference model. Using a diagram show the correspondence between relevant protocol layers in the two models. (12 marks)

b) Explain why the TCP/IP model was developed. (8 marks)

QUESTION FOUR (20 MARKS)

a) List and explain the two types of Internet routing protocols. (8 marks)

b) Describe the type of routing algorithm RIP employs, and where is RIP used? (12 marks)

QUESTION FIVE (20 MARKS)

a) ATM is one of the many WAN technologies. Describe ATM features and characteristics. (8 marks)

b) Briefly explain how the Domain Name Service (DNS) is implemented and how DNS queries are resolved in the DNS system. (12 marks)