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**MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY
(MMUST)
MAIN CAMPUS**

**UNIVERSITY MAIN EXAMINATIONS
2022/2023 ACADEMIC YEAR**

FOURTH YEAR FIRST SEMESTER EXAMINATIONS

FOR THE DEGREES OF

**BACHELOR OF SCIENCE IN COMPUTER SCIENCE
BACHELOR OF INFORMATION TECHNOLOGY**

COURSE CODE: BIT 418E/BCS 470

COURSE TITLE: NETWORK STANDARDS AND PROTOCOLS

DATE: 15/12/2022

TIME: : 08:00-10:00AM

INSTRUCTIONS: Please attempt question one and any other two questions

TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating

Paper Consists of 3 Printed Pages. Please Turn Over



QUESTION ONE

- a. State and explain FIVE routing strategies in network routing [5 Marks]
- b. Differentiate between Distance vector routing and Link State routing [4 Marks]
- c. What does Transparent Bridge mean? [3 Marks]
- d. Discuss THREE protocols found in network layer [6 Marks]
- e. Discuss THREE main actions that network protocols performs that necessitates quick and secure network devices utilization [6 Marks]
- f. Discuss THREE addressing methods used in IPV6 representation. [6 Marks]

QUESTION TWO

- 2a. With an aid of a diagram, discuss Internet protocol version 6 header [10 Marks]
- 2b. Explain THREE ways in which NAT can be configured [6 Marks]
- 2c. State and explain the merits and demerits of NAT [4 Marks]

QUESTION THREE

- 3a. Differentiate between network protocol and Internet Protocol Suite [4 Marks]
- 3b. TCP and UDP are the major protocols in layer 4 of OSI model. With an aid of a diagram discuss these two protocols and point out the main characteristics that distinguishes them [10 marks]
- 3c. Discuss the activities that usually takes place in Transmission Control Protocol [6 Marks]

QUESTION FOUR

- 4a. Discuss FIVE network protocols and their port numbers found in layer seven of OSI model [10 Marks]
- 4b. Discuss FIVE expedited traffic capabilities used in networks protocols [10 Marks]

QUESTION FIVE

- 5a. Discuss FIVE Network standards in computer networking [10 Marks]
- 5b. A router attached to network receives a packet with the destination IP address 190.155.16.16. The network is assigned an address of 190.155.0.0. Assume that the network has two subnets with addresses 190.155.16.0 and 190.155.15.0 and that both subnet ID fields have 8 bits. Demonstrate the details of routing the packet. [6 Marks]
- 5c. Discuss TWO categories of ethernet [4 Marks]