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**UNIVERSITY EXAMINATIONS
2022/2023 ACADEMIC YEAR**

**END OF SEMESTER EXAMINATIONS
YEAR THREE SEMESTER ONE EXAMINATIONS**

**FOR THE DEGREE OF
BACHELOR OF SCIENCE
(COMPUTER SCIENCE)**

COURSE CODE : CSC 313.

COURSE TITLE : COMPUTER NETWORKS

DATE:02/08/2023

TIME: 2.00PM-4.00PM

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTIONS ONE AND ANY OTHER TWO.

QUESTION ONE [COMPULSORY] [30 MARKS]

- a) Using an example define the following terms: [4 marks]
- i. Protocol
 - ii. Logical Topology
- b) Differentiate between the guided and not-guided transmission media giving an example of each transmission media. [6 marks]
- c) Give two advantages and two disadvantages of using fibre optic. [4 marks]
- d) State and briefly any three application standards [6 marks]
- e) Describe in detail the client – server network model. [4 marks]
- f) Explain a honeypot as used in network security. [2 marks]
- g) There are numerous ways an organization can benefit from using a network. Describe any four reasons why an organization should set up a network [4 marks]

QUESTION TWO: [20 MARKS]

- a) Distinguish between a repeater and a switch? [4 marks]
- b) Describe the role of following devices in the context of Computer Networking.
- i) Switch [2 marks]
 - ii) Router [2 marks]
- b) Explain what the ipconfig command is used for in computer networks. [2 marks]
- c) State the different cable types used in LANs [3 marks]
- d) Differentiate between routers and firewalls [3 marks]
- e) Differentiate between WAN and LAN? [4 marks]

QUESTION THREE: [20 MARKS]

- a) State any three differences between UDP and TCP [6 marks]
- b) Define the following terms:
- (i) Transmitter [2 marks]
 - (ii) Receiver [2 marks]
 - (iii) Transmission Medium [2 marks]

- c) Packet switching and Circuit switching are two techniques used in WANs. Compare and contrast the two. [8 marks]

QUESTION FOUR: [20 MARKS]

- a) Compare and contrast Client-server and peer-to-peer networks [4 marks]
- b) What is the difference between Simplex and full-duplex transmission and give one example for each? [4 marks]
- c) TCP/IP is the most popular data communication protocol. Describe the function of each layer of the TCP/IP model [12 marks]

QUESTION FIVE: [20 MARKS]

- a) Explain the importance of Confidentiality Integrity and Availability (CIA), in network security. [6 marks]
- b) What are Denial of service attacks? [2 marks]
- c) Discuss the following Access methods, and state which networks use them.
- (i) CSMA/CD [8marks]
 - (ii) CSMA/CA [4marks]
- d) Describe the functions of a Network Operating System. [4marks]