



(Knowledge for Development)

KIBABII UNIVERSITY
UNIVERSITY EXAMINATIONS
2020/2021 ACADEMIC YEAR

SPECIAL/SUPPLEMENTARY EXAMINATIONS
YEAR THREE SEMESTER ONE EXAMINATIONS

FOR THE DEGREE OF
BACHELOR OF SCIENCE
(COMPUTER SCIENCE)

COURSE CODE : CSC 313
COURSE TITLE : COMPUTER NETWORKS

DATE: 14/01/2022 **TIME: 11.00 A.M – 1.00 P.M**

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]
- Protocol
 - 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 twisted pair over 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. Discuss the benefits of network in any organization. [4 marks]

QUESTION TWO [20 MARKS]

- a) Distinguish between a hub and a switch? [4 marks]
- b) Describe the role of following devices in the context of Computer Networking.
- Bridge [2 marks]
 - Repeater [2 marks]
- b) Explain what the ping 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 MAN and LAN? [4 marks]

QUESTION THREE [20 MARKS]

- a) State any three differences between UDP and TCP [6 marks]
- b) Define the following terms:
- Transmitter [2 marks]
 - 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 Half-duplex 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 and State at least one protocol for each layer [12 marks]

QUESTION FIVE [20 MARKS]

- a) To provide adequate protection of network resources, the procedures and technologies that you deploy need to guarantee three things, Confidentiality Integrity and Availability (CIA), briefly explain what each of these terms mean. [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) Explain four services provided by a Network Operating System. [4marks]