



(Knowledge for Development)

KIBABII UNIVERSITY
UNIVERSITY EXAMINATIONS
2022/2023 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: 19/12/2022

TIME: 9.00 A.M. – 11.00 A.M.

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTIONS ONE AND ANY OTHER TWO.

- f) Explain why network requirements considerations for an organization are done with projections for the future. [2 marks]
- e) Explain why network engineers must stick to industry standards when undertaking structured cabling. [2 marks]
- d) Differentiate between UTP and STP [3 marks]
- c) State the different cable types used in LANs [3 marks]
- b) Explain when the ping command is used in network configuration. [2 marks]
- ii) Switch [2 marks]
- i) Hub [2 marks]
- b) Describe the role of following devices in the context of Computer Networking.
 - a) Distinguish between star and a ring topologies in networks? [4 marks]

QUESTION TWO [20 MARKS]

- a) Discuss the benefits an organization can draw from networking its computers. [4 marks]
- f) Differentiate between even parity and odd parity. [2 marks]
- e) Outline any four advantages of structured cabling. [4 marks]
- d) Discuss the concept of redundancy in error detection [6 marks]
- c) Give two advantages and two disadvantages of using twisted pair over fibre optic. [4 marks]
- b) Differentiate between the guided and not-guided transmission media giving an example of each transmission media. [6 marks]
- a) Define the following terms:
 - i. An error [1 mark]
 - ii. Error Control [1 mark]
 - iii. Protocol [1 mark]
 - iv. Topology [1 mark]

QUESTION ONE [COMPULSORY] [30 MARKS]

QUESTION THREE [20 MARKS]

- a) State any three differences between UDP and TCP [6 marks]
- b) Describe two types of errors that are likely to occur in data communication. [4 marks]
- c) Discuss any TWO mechanisms used for error detection? [8 marks]

QUESTION FOUR [20 MARKS]

- a) Differentiate between Client-server and peer-to-peer networks [4 marks]
- b) Complete the table below showing the cabling types recognized and their respective maximum backbone distances [4 marks]

Cable Type	Maximum backbone distance
100 ohm UTP	
150 ohm STP	
Multimode 62.5/125 optical fiber	
Single Mode 8.3/125 optic fiber	

- c) TCP/IP is the most popular data communication protocol in computer networks. Stating one protocol, describe the function of each layer of the TCP/IP model. [12 marks]

QUESTION FIVE [20 MARKS]

- a) What are Denial of service attacks? [2 marks]
- b) i. Discuss the CSMA/CD Access methods, and state which network uses it. [4 marks]
- ii. Outline any FOUR rules of the thumb that may be followed when running network cables. [4 marks]
- c) Explain four services provided by a Network Operating System. [4marks]
- d) 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]