

061006T4ICT

ICT Technician Level 6

IT/OS/ICT/CR/01/6

Perform Computer Networking

Nov. /Dec. 2022



THE KENYA NATIONAL EXAMINATIONS COUNCIL

WRITTEN ASSESSMENT

Time: 3 hours

INSTRUCTIONS TO CANDIDATE

Maximum Marks for each question are indicated in brackets ().

*This paper consists of **TWO** sections: **A** and **B**.*

Answer questions as per instructions in each section.

You are provided with a separate answer booklet.

*This paper consists of **FOUR (4)** printed pages*

Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing

SECTION A (40 MARKS)

Answer ALL the questions in this section

1. Give **TWO** advantages of deploying wireless networks in an enterprise. (2 Marks)
2. Describe **TWO** differences between a *switch* and a *router* as used in a computer network. (4 Marks)
3. Differentiate between the following pair of terms as used in computer networking:
 - (a) Point-to Point and Multipoint connections (2 Marks)
 - (b) Intranet and Extranet (2 Marks)
4. Describe **TWO** types of performance tests that can be performed on an already installed network. (4 Marks)
5. Kalua has been hired as a network administrator in a company. He is supposed to conduct a network site survey for the company's network. Explain **TWO** types of network sites he is likely to encounter during the survey. (4 Marks)
6. Explain each of the following components as used in networking:
 - (a) Access Point (AP), (2 Marks)
 - (b) Patch panel. (2 Marks)
7. Distinguish between a *client* and a *server* in relation to networking. Give an example of each. (3 Marks)
8. Describe **TWO** elements of a network security policy. (4 Marks)
9. Samson was required to write a summary of the key features of a local area network that he was setting up for his client. Outline any **FOUR** key characteristics of this network that he would have to write about. (4 Marks)
10. Halima set up a firewall in order to secure the network infrastructure of the organisation that she works for. In reference to this statement:
 - (a) What is a firewall? (1 Mark)
 - (b) Explain any **ONE** type of firewall that she could have set up on the network. (2 Marks)
11. Explain the meaning of each of the following computer networking terms:
 - (a) Data Encryption. (2 Marks)
 - (b) Cloud computing (2 Marks)

SECTION B (60 marks)

Answer question 12 and any other TWO questions in this section

12. (a) A network administrator must have the skills needed for assessing the requirements of a network and recommending improvements that may necessitate purchase of new network equipment. Explain **FIVE** considerations that should be put in place before purchase of such equipment. (10 Marks)
- (b) John has been hired by Datacom Networks Limited as a network administrator. He has been mandated by his immediate supervisor to design a new physical topology for the company. Explain **FIVE** types of topologies that John would have to choose from. (10 Marks)
13. (a) Network protocols help define how communication takes place on a network. In reference to protocols and network models:
- (i) Explain **THREE** key features of a protocol. (6 Marks)
 - (i) Explain why TCP/IP reference model has become the popular standard in networking. (2 Marks)
 - (ii) Write statements that can be used to determine whether a remote computer, whose IP address is 209.100.20.14 is accessible from the local network. (2 Marks)
- (b) Sally intends to perform tests on a newly set up network system. Outline **FOUR** equipment that may be necessary to accomplish the task. (4 Marks)
- (c) Juma works for a company that provides networking services. The company specialises in fiber cable connections. Explain **THREE** benefits of implementing networks using fiber cables over other copper media. (6 Marks)
14. (a) Once a network has been set up and in operation, it faces a number of challenges from within and without an organisation. Discuss any **FIVE** threats that a network is likely to experience. (10 Marks)
- (b) Discuss **FIVE** advantages of using open-source software such as Ubuntu in network configuration. (10 Marks)
15. (a) Discuss **FIVE** considerations that should be made when selecting wired transmission media for setting up a network. (10 Marks)
- (b) Discuss **five** major functions of the network layer of the OSI model. (10 Marks)

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