061006T4ICT

ICT LEVEL 6

ICT/OS/IT/CR/1/6

PERFORM COMPUTER NETWORKING

Mar. /Apr. 2023

TIME: 3 Hours

THE KENYA NATIONAL EXAMINATIONS COUNCIL

WRITTEN ASSESSMENT

3 Hours

INSTRUCTIONS TO CANDIDATES

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.

The candidates should answer the questions in English

This paper consists of THREE (3) printed pages

Candidates should check the question paper to ascertain that all pages

are printed as indicated and that no questions are missing

Section A (40 marks)

*Answer **ALL** the questions in this section*

1. Define computer network. (2 Marks)

2. List any **four** categories of networks based on their size and geographical reach.

    (4 Marks)

3. State any **four** benefits of network maintenance plans. (4 Marks)

4. State any **five** factors that affect the performance of a computer network. (5 Marks)

5. Outline any **four** key features that a network operating system must have. (4 Marks)

6. Differentiate between the following as used in computer networking. (4 Marks)

    i) Static IP and Dynamic IP

    ii) Baseband transmission and Broadband transmission

7. Explain what you understand by the following terms as applied in computer networking.

    (6 Marks)

    i) Backbone network

    ii) Anonymous FTP

    iii) VPN

8. Distinguish between Bandwidth and Latency as applied in computer networking.

    (2 Marks)

9. Differentiate between bit rate and baud rate as used in data communication in a network.

    (2 Marks)

10. Explain what you understand by physical topology and logical topology of a network giving

    an example in each case. (4 Marks)

11. Computers on a network can be part of a workgroup or a domain. Differentiate between a Domain and a Workgroup. (3 Marks)

Section B (60 marks)

*Answer **any THREE** Questions in this section*

12. a) A new firm is planning to purchase computers and they have invited you as a network expert to advise them on networking. Explain **five** advantages of computer networking.

(10 Marks)

b) Discuss **five** responsibilities of the network layer of the Open Systems Interconnection (OSI) model. (10 Marks)

13. You have been called upon to set up a computer network of five computers in an office in a school and ensure there is internet access.
    (a) Describe **five** network components you may require to set up the network. (10 Marks)
    (b) Draw the layout for this network. (10 Marks)

14. With the aid of diagram, compare the OSI model and the TCP/IP model. (20 Marks)

15. a) When installing computer network cables, proper care must be taken. Explain any **four** rules to observe when dealing with transmission cables. (8 Marks)

    b) Network security testing aims to assess and analyze the security posture of an entire network. Discuss **six** techniques for Testing Network Security. (12 Marks)

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