

2920/301
DATA COMMUNICATION AND
NETWORKING
July 2019
Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL
DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY

MODULE III

DATA COMMUNICATION AND NETWORKING

3 hours

INSTRUCTIONS TO CANDIDATES

*This paper consists of EIGHT questions.
Answer any FIVE questions in the answer booklet provided.
Candidates should answer the questions in English.*

This paper consists of 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.

(c) Star topology is very popular in data communication systems. Outline **four** advantages that could justify the statement. (4 marks)

(d) (i) Describe **two** types of user interfaces in network operating systems. (4 marks)
 (ii) Troubleshooting a network involves several stages. Explain **three** generic stages used by network administrators. (6 marks)

✓ 8. (a) (i) Outline any **three** layers of TCP/IP model. (3 marks)
 (ii) Distinguish between *router* and *bridge* as used in networking. (4 marks)

(b) (i) Outline **three** factors, other than cost, that should be considered when selecting a fibre optic media. (3 marks)
 (ii) Network administrators use several documents when troubleshooting a network. Describe **two** documents commonly used. (4 marks)

(c) Deno was required to troubleshoot a physical layer of a network for a client. Explain **three** possible symptoms that he could have realized. (6 marks)

✓ 6. (a) (i) Outline **four** parts of an email address. (4 marks)
 (ii) Figure 2 shows typical tools in browser. Outline the function of each of the tools labelled (i), (ii), (iii) and (iv). (4 marks)

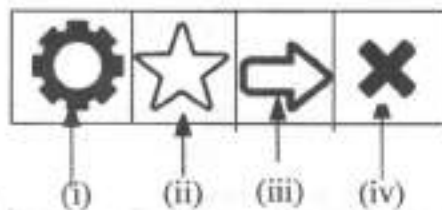


Figure 2

(b) (i) Define the term *wikis* as applied in Internet browser. (2 marks)
 (ii) With aid of a diagram, outline a data communication system. (4 marks)

(c) (i) State **four** types of Internet connections used in business firms. (2 marks)
 (ii) Explain **two** circumstances under which coaxial cables are most applicable in a network installation. (4 marks)

7. (a) Difference between *contention-based* and *controlled media access* methods. (4 marks)
 (b) Describe **three** functions of presentation layer as used in OSI. (6 marks)
 (c) IP protocol is phenomenon when configuring a network. Explain **three** of its general features. (6 marks)
 (d) Most corporate prefers distributed network operating systems. Explain **two** benefits that could be influencing this trend. (4 marks)

8. (a) Explain **two** functions of network interface card in a computer. (4 marks)
- (b) (i) Outline **two** types of transmission impairments. (2 marks)
- (ii) Distinguish between *network control* and *link control* protocols as used in PPP. (4 marks)
- (c) Cloud computing is an emerging technology in business firms. Explain **two** types of clouds that could be used. (4 marks)
- (d) Explain **three** circumstances that would necessitate the implementation of frame relays in corporate networks. (6 marks)

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