**STEPHJOY HIGH SCHOOL**

**COMPUTER STUDIES FORM THREE MARCH/APRIL 2022 ASSIGNMENT**

NAME………………………………………………………………………………………………………………………..CLASS……………..

**FORM FOUR - NETWORKING & DATA COMMUNICATION**

1. Define the following terms: (2mks)
   1. Computer network.
   2. Data communication.
2. (a) Describe the two methods of data transmission on a network. (3mks)

(b) State the factors to be considered while selecting a data transmission system. (3mks)

1. Differentiate between a MODEM and a MULTIPLEXER. (2mks)
2. Differentiate between: (8mks)
3. A baseband and broadband signal.
4. A Network server and a workstation.
5. Remote client and remote host.
6. Half duplex and full duplex transmissions.
7. Explain three advantages and three disadvantages of computer networking. (6mks)
8. (a) State the type of data communication media that could be used in an electronically noisy environment. (1mrk)

(b) Explain your answer in (a) above. (1mrk)

1. (a) Examine the major characteristics of each of the three types of computer networks. (9mks)
2. (a) Define the term Transmission media. (1mrk)

(b) Give two advantages and two disadvantages of each of the following network transmission media.

1. Twisted pair cables.
2. Coaxial cables.
3. Fibre optic cables.
4. Wireless / Microwave / Radio transmission.
5. Explain the *line of sight principle* in wireless communication. (1mrk)
6. (a) Explain the function of each of the following on a network:
7. Network Interface Card (1mrk)
8. Repeater (1mrk)
9. Gateway. (1mrk)

(b) Differentiate between a router and a gateway as used in networking. (2mks)

1. (a) Study the diagram below and answer the questions that follow:

1. Name the communication media depicted in the above diagram. (1mrk)
2. Name the parts labelled A, B, C and D. (4mks)
3. List three advantages of the above communication media. (3mks)
4. (a) Give three examples of protocols used in networking. (2mks)
5. (a) Define the term Network topology. (2mks)

(b) Distinguish between Logical and Physical network topology. (2mks)

1. (a). Briefly explain the following terms as used in networking: (2mks)
   * 1. Remote communication.
     2. Distributed processing.

(b). State three advantages and two disadvantages of a mesh network topology. (5mks)

1. (a) With the aid of a diagram, explain hierarchical (tree) network topology. (3mks)

(b) List two advantages and two disadvantages of hierarchical network topology.

(4mks)

1. State the purpose of each of the following: (2mks)
2. file server software
3. communication software
4. (a) The diagram below shows four common network topologies A, B, C and D.

Z

W X Y

**1 2 3 4 5 6 7 8 9**

TOPOLOGY A TOPOLOGY B

TOPOLOGY C TOPOLOGY D

Server Terminal Printer

1. Name the network topologies labelled A, B, C and D. (4mks)
2. Explain what happens if server X in topology A fails. (1mrk)
3. List two problems associated with network topology B. (2mks)
4. List two disadvantages associated with network topology D. (2mks)

(b) Differentiate between Internet and World Wide Web. (2mks)