Instructions:

Answer Question ONE and any other two questions.

Question One (30mks)

 a) Define the following terms. (4mks)

 (i) Network administration

 (ii) Network topology

b) Distinguish the following as used in Networks design (8mks)

(i) Ring topology and a Star topology

(ii) Intranet and Extranet

 c) Explain the purpose of the following protocols: (4mks)

 (i) Dynamic Host Configuration Protocol (DHCP)

(ii) Simple Network Management Protocol (SNMP)

 d) With reference to the step of network development distinguish between a logical topology and a physical topology. (4mks)

e) What are Denial of service attacks? (2mks)

f) (i) Why is it important to do site survey when planning for a network upgrade? (2mks)

 (ii) Describe any three areas you would look at when conducting a site survey. (6mks)

Question Two

(20mks)

a) Describe any four factors that influence network development and expansion. (4mks)

b) Computer networks can be classified as new or existing networks. State any two questions for each case (new and existing) you would ask the owner of the network before designing the network or upgrading their network. (4mks)

c) Discuss the four fundamental design goals that are considered by a network designer during network design and development. (8mks)

d) Distinguish between logical addressing and physical addressing and state which layer of the OSI model each operates at. (4mks)

Question Three (20mks)

a) A router is one of the primary devices used in Wide Area Networks:

(i) State the factors to consider before purchasing a router. (6mks)

(ii) List the core function of a router. (2mks)

(iii) What is an integrated service router (ISR) (2mks)

b) There are two options available to an organization when it comes to purchasing inter-network equipment's (e.g. a router) from an ISP; Managed service or In-house, explain the difference between the two approaches. (4mks)

c) 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. (6mks)

Question Four (20mks)

a) One of the major components of any local area network is the network operating system NOS
(i) Define the term network operating system. (1mk)

(ii) List any four functions of a Network Operating System (NOS) (4mks)

(iii) State any three Network Operating System (NOS). (3mks)

b) Explain any three considerations to make when buying local area network (LAN) devices. (6mks)

c) State the function of the following LAN devices

(i) Switch

(ii) Network interface card (4mks)