MOMBASA POLYTECTNICUNIVERSITY COLLEGE

Bachelor of Science in I.T- BSC I.T 11M

BIT 2108- COMPUTER NTETWORKS

INSTRUCTIONS

THERE ARE **FIVE** QUESTIONS IN THIS PAPER
SECTION A IS COMPULSORY
ANSWER ANY **TWO** QUESTIONS IN SECTION B

SECTION A

QUESTION 1

(a) Outline any FOUR factors that distinguish packet switching from circuit switching.   4 marks

(b) (i) Find the classes and the subnet mask of the following IP addresses
      i.   213.14.2.1
      ii.   129.14.6.8
      iii.   114.34.2.8   **3 Marks**
(c) Outline any EIGHT reasons for using different network topologies 4Marks
(d) Outline any FOUR properties of network protocols   4 marks
(e) Describe any FOUR key factors that are considered in selecting a transmission media   4 Marks
(f) Describe any TWO factors that will limit the number of repeaters in a computer network   4 Marks
(g) Outline any FOUR function of a hub in a computer network   4 Marks
(h) Outline FOUR key components of an optical fibre communication link. 4Marks

(i) Outline any SIX transmission line impairments.   3 marks
(j) Outline any FOUR reasons for using different network topologies - 2 Marks

QUESTIOION 2
   (a) Describe a multilayered switch in computer networks   2 Marks

   (b) Explain any FOUR ways of classifying computer networks   8 marks
(c)(i)Define medium access method

(ii) Outline the purpose of medium access methods

(ii) Describe in detail any THREE popular medium access methods

          10 marks

QUESTIOION 3

(a) Explain any FOUR non-connector based power losses in optical fibre 4 marks

(b) i) Define multiplexing as applied in computer networks
    (ii)Outline any FOUR forms of multiplexing commonly employed in computer networks   3 marks

(c) Describe the function of the following OSI layer   4 marks
      i. Transport -.

      ii. data link

(d) Compare and contrast any THREE network topologies in terms of their strengths and weakness   6 Marks

(e) Outline any THREE advantages of installing network bridges   3 Marks

QUESTIOION 4
  (a) (i) Define Asynchronous Transfer Mode ATM
  (i)   Outline any SIX characteristics of ATM   7 Marks

  (b) Outline any SIX characteristics of Frame relay   6 Marks

  (c) (i) explain any TWO routing requirement in packet switched networks

     (ii) Describe Adaptive routing
  (ii)   State any THREE advantages of adaptive routing

          7 marks
QUESTIOION 5

  (a) State any FOUR reasons for errors in data communication   4 Marks
  (b) Outline any FOUR requirement for an encoding technique   4 Marks
  (c) (i)Describe Delta Modulation
     (i)   Outline THREE main features of Delta Modulation   7 marks
  (d) Prove that the receiver will not detect an error if no bit error occurs during transmission given that a polynomial 11001 is used to code a message 111001
          5 marks