



KENYA METHODIST UNIVERSITY

END OF 1ST TRIMESTER 2010 EXAMINATIONS

FACULTY : **COMPUTING AND INFORMATICS**
DEPARTMENT : **COMPUTER INFORMATION SYSTEMS**
UNIT CODE : **CISY 231**
UNIT TITLE : **TELECOMMUNICATION NETWORKS 1**
TIME : **2 HOURS**

Instructions:

- Answer all questions in section A and any 2 in section B.

SECTION A (30 MARKS)

Question 1

- a) Describe the following terms and give an example in each case;
- i) Telecommunication
 - ii) Media
 - iii) Parity check
 - iv) Media access method
 - v) Multiplexing (10 mks)
- b) Describe attenuation and state how it can be addressed. (2 mks)
- c) Identify and describe any two types of bridges. (4 mks)
- d) Describe hamming code process and give an examples. (4 mks)
- e) A newly established organization is considering recruiting a network expert to guide them through the process of design, acquisition of materials and installations of a new converged network. Explain the actual tasks the experts will be involved in during the stated process. (10 mks)

SECTION B (40 MARKS)

Question 2 (20 marks)

- a) While enquiring about the services offered by an **[ISP]** you have been informed that for **[Backbone cabling]** they are using **[single mode fiber optic]** but with a **[redundant wireless link]**. The company is offering special rates for past consistent clients by doubling their **[bandwidth]** at no extra cost. Explain clearly all the terms in bold. (10 mks)

- b) Describe the following data encoding techniques and give an example;
 - i) Non-return to zero
 - ii) Manchester encoding (6 mks)
- c) Discuss CSMA/CD media access method. (4 mks)

Question 3 (20 marks)

- a) Differentiate open standards from proprietary standards and give an example in each case. (3 mks)
- b) Describe the functions of the presentation layer of the OSI reference model. (6 mks)
- c) Distinguish the terms unicast, multicast and broadcast as used in data transmission giving an example from network 192.168.10. (6 mks)
- d) Discuss frame relay WAN technology. (5 mks)

Question 4 (20 marks)

- a) Differentiate connection-oriented from connection-less protocols and give an example in each case highlighting a strength and weakness in each. (6 mks)
- b) Identify and describe the role of any three protocols that operate at the application layer of the TCP/IP protocol model. (6 mks)
- c) You have been co-opted into a committee that is dealing with evaluation of various transmission media. Highlight your attributes under the headings; bandwidth, availability , cost, expertise. (8 mks)