JARAMOGIOGINGAODINGAUNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF INFORMATICS AND INNOVATIVE SYSTEMS

BSC in Information Technology Security and Audit

First Year - Second Semester Examination 2013/2014

Kisumu Learning Centre

IIT 3121 - Data Communication Principles

TIME: 2 HOURS

Instructions

1. This paper Contain five questions
2. Question one is compulsory and any other two questions
3. Answer the questions on the booklet provided
4. Mobile phones are not allowed in the exams room

QUESTION ONE 30marks

a) Define the following terms as used in networking

i) Peer to Peer Architecture (2 Marks)

ii) Client/Server Architecture (2 Marks)

iii) Repeater (2 Marks)

iv) Hub (2 Marks)

v) Bridge (2 Marks)

vi) Modem (2 Marks)

b) Describe the following classes of data communication

  i) Simplex (3 Marks)

  ii) Half Duplex (3 Marks)

  iii) Full Duplex (3 Marks)

c) Critically examine the factors to consider when selecting a network topology(10 Marks)

QUESTION TWO(20 Marks)

  a) XYZ Company intends to layout its network infrastructure and link up all its operations. You are required to list and describe all the necessary hardware and software required for this undertaking. (20 Marks)

QUESTION THREE(20 Marks)

  a) State the roles transport and application layers of the OSI model(8 Marks)

  b) List the advantages of using Fibre Optic cable over other cables(8 Marks)

  c) Distinguish between LAN and MAN network (4 Marks)

QUESTION FOUR(20 Marks)

  a) List **FOUR** common wireless transmission media (8 Marks)

  b) Highlight the difference between OSI and TCP/IP models (12 Marks)

QUESTION FIVE(20 Marks)

  a) Discuss **THREE** drawbacks of TCP/IP model (9 Marks)

  b) Differentiate between Asynchronous, Synchronous and Isochronous Communication

(9 Marks)

c) Name any **TWO** data encoding/Conversion techniques (2 Marks)