



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF INFORMATICS AND INNOVATIVE SYSTEMS
UNIVERSITY UNDERGRADUATE EXAMINATIONS
2nd YEAR 1ST SEMESTER 2016/2017 ACADEMIC YEAR
MAIN CAMPUS**

COURSE CODE: IIT 3121

COURSE TITLE: DATA COMMUNICATION PRINCIPLES

EXAM VENUE: STREAM: ICT

DATE: EXAM SESSION:

TIME: 2.00 HOURS

INSTRUCTIONS:

- 1. Answer Question 1 (Compulsory) and ANY other two questions**
- 2. Candidates are advised not to write on the question paper**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room**

QUESTION ONE: (30 MARKS)

- a) In your own way, explain how data traverses from one end to another in a network. (2 marks)
- b) Data Communication channels are present in a number of platforms. Enumerate them (2 marks)
- c) "Performance of network depends on the channel". Discuss it with different transmission media. (5 marks)
- d) Differentiate between a protocol and an interface in regard to data communication (4 marks)
- e) Explain the following:-
 - i. Synchronous Transmission. (2 marks)
 - ii. Asynchronous Transmission (2 marks)
 - iii. Ethernet (2 marks)
- f) Discuss any two types of errors that occur during digital transmission. (2 marks)
- g) Explain the various Network topologies with aid of neat diagrams in each case (9 marks).

QUESTION TWO: (20 MARKS)

- a) Distinguish between Internet and intranet (3 marks)
- b) Discuss all the six basic hardware components used in construction of any network. (6 marks)
- c) Discuss the protocols employed in packet switching (9 marks)
- d) What is a Packet sniffer (1 mark).

QUESTION THREE: (20 MARKS)

- a) What are some of the security concerns of conducting business on the e-platform (10 marks)
- b) How would you encounter these stated concerns technologically or otherwise (10 marks)

QUESTION FOUR: (20 MARKS)

- a) Define routing? (2 mark)
- b) Discuss Shortest path and equal distance measure routing algorithms (9 marks)
 - i. How do you enforce the following
 - ii. Availability
 - iii. Confidentiality
 - iv. Integrity (9 marks)

QUESTION FIVE :(20 MARKS)

1. Discuss the following giving illustration on how they interrelate:-
 - a. HTTP (3 marks)
 - b. WWW (3 marks)
 - c. DNS (3 marks)
- a) Discuss ANY FOUR document management centre's or libraries you are aware of that inappropriate information security almost brought the business its knees (11 marks)