



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY UNIVERSITY EXAMINATIONS

FIRST YEAR SECOND SEMESTER EXAMINATION FOR BACHELOR IN FOOD

SECURITY

SCS 3231: DATA COMMUNICATION AND NETWORKING

TIME: 2 HOURS

Instructions:

- I. This paper contains **Five** questions
- II. Question one is compulsory
- III. Answer any other two questions

QUESTION ONE

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

- a) List **FOUR** common wireless transmission media (8 Marks)
- b) Highlight the difference between OSI and TCP/IP models (12 Marks)

QUESTION THREE

- 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

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

QUESTION FIVE

- 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)

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