



ZIMBABWE EZEKIEL GUTI UNIVERSITY

**FACULTY OF SCIENCE, TECHNOLOGY, AGRICULTURE AND FOOD
SYSTEMS DEVELOPMENT**

INFORMATION SYSTEMS DEPARTMENT

EXAMINATION PAPER

COURSE CODE : BIS215
COURSE TITLE : DATA COMMUNICATION AND COMPUTER
NETWORKS
DURATION : 3 Hours
LEVEL : 2.1
DATE : 2026

09 JUN 2026

INSTRUCTIONS TO CANDIDATES:

1. Answer ALL 4 questions
2. Each question carries 25 Marks.

QUESTION 1

Evaluate common threats in networks (spoofing, MITM, replay) and propose layered mitigations. [25 marks]

QUESTION 2

Critically evaluate how the OSI model can be used to troubleshoot complex network problems. In your answer, explain how faults at different layers (Physical, Data Link, Network, Transport, Session, Presentation, Application) manifest as symptoms at the user level, and propose a layered diagnostic approach with at least one example per relevant layer. [25 marks]

QUESTION 3

Discuss how bandwidth versus latency constraints affect end-to-end service quality (QoS) for real-time applications. [25 marks]

QUESTION 4

Critically outline and explain how error detection, control, and correction are implemented in data communications. Support your answer with real-world examples of protocols or systems, and include a discussion of error detection codes (e.g., parity checks, checksum, CRC) and how they help identify corrupted data. [25 marks]

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