

OIT 137 data communications and networking
PRACTICAL 1&2

Instructions:

- Copying and pasting is prohibited (50% cut)
 - Plagiarism is prohibited
 - Work individually
 - Used drawing tools
 - Write your registration Number clearly and submit in PDF format
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1. Using a packet analyzer tool (e.g., Wireshark, packet tracer), capture a set of packets from a network activity (such as visiting a website). Analyze the captured packets to:
 - a) Identify the protocols used at each OSI layer.
 - b) Explain the role of each identified protocol in the data communication process.
 - c) Highlight any findings that indicate how Layer 3 (Network Layer) routing decisions are made.
 - d) Discuss how Layer 4 (Transport Layer) protocols ensure data integrity and order.

 2. You are provided with a network topology and a list of symptoms indicating network issues, such as slow internet connectivity, inability to access certain network resources, and intermittent connectivity problems. Your tasks are:
 - a) Diagnose the issues based on the symptoms and the provided network topology.
 - b) Identify potential causes for each symptom.
 - c) Propose solutions to resolve the identified issues.
 - d) Implement the solutions on a network simulator and test the network to ensure that the issues are resolved.