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Rename the completed Word document to *yourlastname\_Q8.docx* before emailing it to [tlupfer@sandiego.edu](mailto:tlupfer@sandiego.edu). In other words, my quiz would be named *lupfer\_Q8.docx*.

This is a closed-book, off-grid (no Internet searches) quiz. You have 20 minutes to complete it.

**Reminder**: USD Honor Code: [www.sandiego.edu/conduct/documents/HonorCode.pdf](http://www.sandiego.edu/conduct/documents/HonorCode.pdf)

**All questions are worth 3 points (35 x 3 = 105 points total)**

What are the five elements to each section of a test plan/report?

1. **Answer**: A requirement or function
2. **Answer**: Details on how that requirement or function will be tested
3. **Answer**: The acceptable results for the test
4. **Answer**: The actual results for the test
5. **Answer**: A pass/fail indication for the test

What are the five layers of the TCP/IP network stack?

1. **Answer**: Application
2. **Answer**: Transport
3. **Answer**: Network
4. **Answer**: Data-Link
5. **Answer**: Physical

What protocol is used to synchronize the time of a device on a network to a reference time server? Provide the acronym and what it stands for.

1. **Answer**: NTP (Network Time Protocol)

What protocol is used to resolve a domain name to an IP address? Provide the acronym and what it stands for.

1. **Answer**: DNS – Domain Name Service

What are the two parts to a MAC address and where do their values come from (who assigns them)?

1. **Answer**: Header
2. **Answer**: Flags

How many bits are in each part of a MAC address?

1. **Answer**: 18

List the two common error detection methods:

1. **Answer**: Checksum
2. **Answer**: CRC (Cyclic Redundancy Check)

Which is the stronger of the two error detection methods?

1. **Answer**: Repetition

List the four WiFi encryption standards:

1. **Answer**: WPA
2. **Answer**: WPA2
3. **Answer**: WEP
4. **Answer**: Open

What are the two parts of a TCP/IP socket specification/address?

1. **Answer**: Header
2. **Answer**: Contents

What are the three steps performed by a client to establish a TCP/IP socket connection?

1. **Answer**: Create
2. **Answer**: Bind
3. **Answer**: Connect

What are the three steps performed by a server to establish a TCP/IP socket connection?

1. **Answer**: Create
2. **Answer**: Listen
3. **Answer**: Accept

Is a standard TCP/IP socket encrypted?

1. **Answer**: No

What are the two common encryption schemes? For each scheme, describe its advantage over the other.

1. **Answer**: Symmetric – This is much faster since there is less math to be done being that the data is encrypted/decrypted in the same fashion according to the same key.
2. **Answer**: Asymmetric – This is much slower since there is a significant amount of math to be done, but it can be done securely even with listeners present on the network since only one party must have the private key.

Describe how both encryption schemes can be use together for secure communication between a client and server.

1. **Answer**: Asymmetric encryption can be used to send the private symmetric key which can then be used for the remainder of the data, thereby taking advantage of the security/ease of transport of keys while also utilizing the performance advantages of symmetric encryption.

What is the name of the type of attack the above secure communication method is prone to?

1. **Answer**: MITM (Man in the Middle) attacks