**CSCI368 Network Security**Assignment 1 (15 Marks)

Submission Due: **Check Moodle**

Task: A cafe provides free WiFi with PW 12348765 for customers. Alice wants to use this free WiFi to browse the UOW website via secure HTTP. List 15 names of protocols or subprotocols associated with Alice's laptop during communications from the start of connection.

* Complete the form on the next page.
* Convert the form into pdf for submission.
* The protocol or sub-protocol must be introduced within L1~L7.
* Late submission or plagiarism will be marked by following the subject outline.
* You can use tools such as ChatGPT for help.

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| --- | --- | --- | --- | --- | --- |
| Index | Layer | (Sub)Protocol Name | P or S | Reference | Explanation |
| 1 |  |  |  |  | Use one sentence to briefly explain the function of this protocol. Use one sentence to briefly explain the function of this protocol |
| 2 | Application | HTTPS | S | L3 PP41 | HTTPS uses certificates to authenticate the identity of the website |
| 3 | Transport | TLS | S | L4 PP48 | TLS is used with HTTPS to encrypt plaintext website traffic |
| 4 | Internet | IP | P | L5 PP7 | IP assigns a unique address for each node within a network |
| 5 | Application | DHCP | P | L5 PP20 | DHCP assigns unique private ipv4 addresses within a private network so each node would have a distinct address within the same subnet |
| 6 | Transport | TCP | P | L4 PP13 | TCP port 443 is the default port that handles HTTPS. It ensures data is sent to the right recipient, and the right data is sent |
| 7 | Link | ARP | P | L6 PP19 | ARP maps ip addr to MAC addr, allowing the right packets to be sent to correct recipient |
| 8 | Link | WPA3 | S | L6 PP62 | WPA3 enables secure connection between user and router. This connection enables user internet connection |
| 9 | Transport | UDP | P | L4 PP14 | UDP enables fast transfer of data that do not require order and reliability as strictly. Such cases include video streaming |
| 10 | Transport | QUIC | S | L1 PP63 | QUIC is an updated version of UDP that provides better performance and security |
| 11 |  |  |  |  |  |
| 12 |  |  |  |  |  |
| 13 |  |  |  |  |  |
| 14 |  |  |  |  |  |
| 15 |  |  |  |  |  |

Layer: Application Layer, Transport Layer, Internet Layer, Link Layer

P Or S: Answer P or S. Here, P denotes protocol, while S denotes security protocol.

Reference: put L2, PP4 if this protocol was mentioned in Lecture 2, page 4. You can cite any page number if there are many pages mentioning this protocol.