# UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING

## IS2109 Information Systems Security - Practical 8
## Secure Web Browsing

**Instructions:**

- **Submit answers for all the following questions. Clearly mention the Question Numbers.**

- **You must submit your answers as a PDF document named as P8_GroupNumber (E.g. P8_Group 5)**

- **Only one document should be submitted from a group and make sure to mention the index numbers of the group members at the end of the document.**

1. **Virtual Private Networks (VPN)**
    i.    What is meant by pseudo-anonymity?
    ii.   List down five advantages of a VPN?
    iii.  Define the term "VPN"?
    iv.   Describe the types of VPN.
    v.    Explain the following VPN protocols.
        a. IPsec (Internet Protocol Security)
        b. IKE (Internet Key Exchange)
        c. L2TP (Layer 2 Tunneling protocol)
        d. SSL/TLS (Secure Socket Layer/Transport Layer Security)
    vi.   Explain the main components of a VPN.
        a. The three main components of VPNs are **tunnels, endpoints**, and **sessions**.
    vii.  Evaluate the VPN from a security perspective.
    viii. What are the suitable use cases for VPN?
    ix.   List down and explain the major design issues of VPNs.
    x.    Briefly explain the process of How to set up a VPN on the Linux machine.

## 2. Tor Project

Tor is a free software that implements onion routing to keep you anonymous on the internet. There are the different implementations of tor, the famous one is the Tor Browser, which you can install from the tor project website. It is a custom made Firefox browser with onion routing enabled and many insecure plugins disabled. Also there are other implementations of Tor available.

i. What is meant by 'Dark Web'?
ii. What is the difference between the Dark Web and the Deep Web?
iii. What is Onion routing? Explain
iv. Explain the term "Hidden Services"
v. Explain the process of protecting privacy in the Tor browser.
vi. What is the difference between Tor and VPN?
vii. Explain a few disadvantages of the Tor browser.