3. Security must be considered at multiple levels in a Web application.

    (a) The HyperText Transport Protocol (HTTP) is a protocol for requesting data on the Web.

        i. HTTP is a stateless protocol. Explain why HTTP is stateless. [1]

        ii. Explain how state is maintained by applications that communicate over HTTP. [3]

    (b) Describe the process of setting up a HTTPS connection [10]

    (c) What is the role of a Certificate Authority (CA) and why do we need them? [2]

    (d) Describe how a user's session may be hijacked by a malicious user. [4]

    (e) Explain how Cross Site Scripting (XSS) may be used to inject malicious content into a page, and suggest how it can be prevented. [5]