Topic 2: Application Layer – The Web and HTTP

Questionnaire 1

Q1. The World Wide Web (WWW) is one of the most widely used services in the Internet, and consists in a set of web pages and other resources accessible via the Internet. The WWW uses:

A. HTTP as its application layer protocol that specifies the contents and layout of a web page.

B. HTTP as its application layer protocol and UDP at the transport layer (on Port 80).

C. HTML as its application layer protocol, which is a stateless protocol.

D. a transfer protocol that specifies how a browser interacts with a web server to transfer objects in terms of a client-server model.

Q2. The Uniform Resource Locator (URL) is a key standard that the WWW uses. A URL:

A. specifies the format and meaning of web page identifiers.

B. can only omit the protocol and the port, in which case HTTP protocol and port number 80 are assumed.

C. does not support an explicit protocol reference of `file://`

D. contains all the information a browser needs to identify the location of Internet resources if the URL contains an explicit protocol and host references.

Q3. Consider HTTP with persistent connections and non-persistent connections.

A. One of the disadvantages of HTTP with non-persistent connections is that each requested object comprises a delivery delay of two RTTs (*round-trip time*).

B. One of the advantages of HTTP with persistent connections with pipelining is that each requested object comprises a delivery delay of only one RTT.

C. HTTP/1.0 introduced persistent connections.

D. Persistent connections without pipelining allow a new HTTP request without waiting for a response to a previous request.

Q4. HTTP provides two types of messages: HTTP Request Message and HTTP Response Message. Considering these two types of messages:

A. The method field in the request line of HTTP/ 1.0 request messages can take the value `PUT`, which uploads an object in the entity body to a path specified in the URL field.

B. The method field in the request line of HTTP request messages can take different values, including `GET` (retrieve object identified in URL) and `HEAD` (retrieve metainformation about object identified in URL).

C. The status line of HTTP request messages has 3 fields.

D. The `date:` header line of HTTP response message indicates the time when the object was created or last modified.

Q5. A Web cache (or proxy server) is a network entity that satisfies HTTP requests without involving the origin Web server. Considering Web caching:

A. A proxy server does not act as a client.

B. HTTP's conditional GET mechanism is used to determine if the proxy server has the most up-to-date version of an object housed in a Web server.

C. By sending an HTTP request message that uses the `GET` method and includes a `Last-Modified:` header line, a proxy server is issuing a conditional GET.

D. Web caches cannot substantially reduce Web traffic in the Internet as a whole.