

Topic 2: ApplicationLayer

Questionnaire 2: The Web and HTTP

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.