

## Computer Science Worksheet 2 – Detailed Answers

### Topic: The Internet and the World Wide Web

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#### Section A: Multiple Choice (5 marks)

1. **Answer: (b) To connect computers and devices globally**

- The Internet is a global network that links devices to share information and enable communication.

2. **Answer: (c) HTTPS**

- HTTPS (HyperText Transfer Protocol Secure) encrypts data using SSL/TLS, unlike HTTP, which sends plain text.

3. **Answer: (a) Domain Name System**

- DNS translates human-readable URLs (e.g., www.google.com) into machine-readable IP addresses (e.g., 142.250.190.46).

4. **Answer: (b) Session cookie**

- Session cookies are temporary and deleted when the browser closes, while persistent cookies remain until expiry.

5. **Answer: (b) To access and display web pages**

- Web browsers (e.g., Chrome, Firefox) fetch and render HTML files from web servers.
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#### Section B: Short Answer (10 marks)

6. **Definitions:**

- **URL (1 mark):** A Uniform Resource Locator is the address of a webpage or file on the Internet (e.g., https://www.example.com).
- **Web Server (1 mark):** A physical computer/system that stores, processes, and delivers website files to users (e.g., Apache, Nginx).

7. **HTTP vs HTTPS (2 marks):**

- **HTTP** is unencrypted, making data vulnerable to eavesdropping. **HTTPS** uses SSL/TLS encryption to secure data (e.g., for banking or login pages).
- Example: http://example.com (insecure) vs https://facebook.com (secure).

8. **DNS Role (2 marks):**

- DNS converts a URL (e.g., www.youtube.com) into an IP address (e.g., 142.250.190.46) to locate the web server. This avoids the need to memorize IP addresses.

**9. Browser Features (2 marks):**

- **Bookmarks:** Save frequently visited sites.
- **Multiple Tabs:** Open several pages in one window.  
(Other answers: Address bar, cookies, history, navigation buttons.)

**10. Persistent Cookie Use (1 mark):**

- Example: Saving login details (e.g., Gmail remembers your username).

**11. HTTPS Safety (1 mark):**

- HTTPS encrypts data to prevent hackers from intercepting sensitive information (e.g., passwords, credit card details).

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**Section C: Structured Questions (10 marks)**

**12. Retrieving a Web Page (5 marks):**

**Correct Order:**

1. User types a URL into the browser.
2. DNS server provides the IP address.
3. Computer connects to the website server.
4. Server sends HTML files to the browser.
5. Browser renders the page.

**13. Cookies (5 marks):**

**a) Definition (1 mark):**

- Small files stored on a user's device by a web server to track data (e.g., preferences, login status).

**b) Uses (2 marks):**

1. Auto-login (e.g., Facebook remembers your session).
2. Shopping cart storage (e.g., Amazon retains items between visits).

**c) Session vs Persistent Cookies (2 marks):**

- **Session Cookies:** Temporary; deleted when the browser closes (e.g., online banking logout).
- **Persistent Cookies:** Stored until expiry; used for long-term preferences (e.g., language settings).