

1. Which JSP tag is used to embed a block of Java code that is executed every time the page is requested?

- A) `<%= ... %>`
- B) `<%! ... %>`
- C) `<%-- ... --%>`
- D) `<% ... %>`

Answer: D

2. Which JSP implicit object is used to access the `HttpSession` associated with the request?

- A) `application`
- B) `session`
- C) `request`
- D) `response`

Answer: B

3. Which JSP tag is used to declare variables and methods that become members of the generated servlet class?

- A) `<%= ... %>`
- B) `<% ... %>`
- C) `<%! ... %>`
- D) `<jsp:useBean ... />`

Answer: C

4. How can you retrieve an attribute named "username" from the `HttpSession` object in a JSP?

- A) `<%= session.getAttribute("username") %>`
- B) `<%= request.getParameter("username") %>`
- C) `<%= application.getAttribute("username") %>`
- D) `<%= response.getWriter().write("username") %>`

Answer: A

5. Which JSP tag is used to output the value of a Java expression directly to the response?

- A) `<% ... %>`
- B) `<%! ... %>`
- C) `<%= ... %>`

D) `<jsp:getProperty ... />`

Answer: C

6. Which JSP action tag is used to forward the request and response objects to another resource (servlet or JSP) on the server?

A) `<jsp:include page="..." />`

B) `<jsp:forward page="..." />`

C) `<jsp:param name="..." value="..." />`

D) `<jsp:useBean id="..." class="..." />`

Answer: B

7. What method is invoked when an `HttpSession` is first created?

A) `sessionCreated()` of `HttpSessionListener`

B) `requestInitialized()` of `ServletRequestListener`

C) `contextInitialized()` of `ServletContextListener`

D) `sessionActivated()` of `HttpSessionBindingListener`

Answer: A

8. Which object has the shortest scope among `request`, `session`, and `application`?

A) `request`

B) `session`

C) `application`

D) They all have the same scope.

Answer: A

9. Which listener interface has a method that is called when the web application is starting up?

A) `HttpSessionListener`

B) `ServletRequestListener`

C) `ServletContextListener`

D) `HttpSessionAttributeListener`

Answer: C

10. What is the purpose of the `session.invalidate()` method in a servlet or JSP?

A) To clear all attributes from the session.

B) To close the connection to the client.

C) To terminate the current session and unbind all objects.

D) To redirect the user to a login page.

Answer: C

11. Which JSP action tag is used to instantiate a JavaBean and specify its scope?

A) `<jsp:setProperty ... />`

B) `<jsp:getProperty ... />`

C) `<jsp:useBean ... />`

D) `<jsp:include ... />`

Answer: C

12. Which method is invoked when an HTTP request is about to go out of scope?

A) `requestDestroyed()` of `ServletRequestListener`

B) `sessionDestroyed()` of `HttpSessionListener`

C) `contextDestroyed()` of `ServletContextListener`

D) `requestEnded()` of `ServletRequestListener`

Answer: A

13. Data stored in the `application` implicit object is available to:

A) Only the current user's current request.

B) Only the current user's entire session.

C) All users across all sessions within the same web application.

D) All web applications on the entire server.

Answer: C

14. How do you set an attribute in the `application` scope using a scriptlet?

A) `<% request.setAttribute("data", value); %>`

B) `<% session.setAttribute("data", value); %>`

C) `<% application.setAttribute("data", value); %>`

D) `<% response.setAttribute("data", value); %>`

Answer: C

15. Which implicit object represents the `ServletContext` and is used to store data for the entire application lifecycle?

A) `request`

B) `session`

C) `pageContext`

D) `application`

Answer: D