

**ADVANCED JAVA & WEB TECHNOLOGY
(INFO 3101)**

Time Allotted : 2½ hrs

Full Marks : 60

Figures out of the right margin indicate full marks.

*Candidates are required to answer Group A and
any 4 (four) from Group B to E, taking one from each group.*

Candidates are required to give answer in their own words as far as practicable.

Group - A

1. Answer any twelve:

12 × 1 = 12

Choose the correct alternative for the following

- (i) The elements within the web document can be accessed through _____ method of DOM.
(a) getElementById() (b) retrieveElementById()
(c) accessElementById() (d) postElementById().
- (ii) JSP provides session object _____.
(a) implicitly (b) explicitly
(c) as predefined method/component (d) anonymously.
- (iii) JSF technology based upon which of the following architecture?
(a) MVVM (b) Layered architecture
(c) Client-server architecture (d) MVC architecture.
- (iv) JSP files are compiled into a servlet by _____.
(a) IS server (b) Windows server
(c) JSP engine (d) GSP container.
- (v) The cookie can set with an expiry information through _____ method.
(a) setMaxAge() (b) setAge()
(c) Age() (d) noAge()
- (vi) Driver Manager class is a member of _____ package.
(a) java.util (b) javax.servlet
(c) java.io (d) java.sql
- (vii) How can we invalidate a session?
(a) session.discontinue() (b) session.invalidate()
(c) session.disconnect() (d) session.falsify()

- (viii) Which of the following is correct about resource representation in REST?
- (a) REST uses various representations to represent a resource where text, JSON, XML
 - (b) XML and JSON are the most popular representations of resources
 - (c) Both of the above
 - (d) None of the above.
- (ix) Which one is the correct order of phases in JSP life cycle?
- (a) Initialization, cleanup, compilation, execution
 - (b) Initialization, compilation, cleanup, execution
 - (c) Compilation, initialization, execution, cleanup
 - (d) Cleanup, compilation, initialization, execution
- (x) Which of the following HTTP method should be used to fetch resource using RESTful web service?
- (a) Get
 - (b) Delete
 - (c) Put
 - (d) Options.

Fill in the blanks with the correct word

- (xi) The doGet() method extracts value of a parameter by using _____.
- (xii) In JSP action tags, _____ tag is used for java bean.
- (xiii) Logical codes are embedded into a JSP page using _____ component.
- (xiv) Application is an instance of _____ class.
- (xv) _____ bean is represents persistent data storage.

Group - B

2. (a) Why HTTP is called stateless, connectionless, media independent protocol? State the differences between HTTP GET and POST method. [[CO1](Remember/LOCQ)]
- (b) Describe the request and response format of the HTTP protocol. [[CO1](Understand/LOCQ)]
- (3 + 3) + 6 = 12**
3. (a) What are the different selectors present in CSS? Explain with example. [[CO1](Analyse/IOCQ)]
- (b) Write a Java swing program which will accept two values in text boxes and display addition result in third text box. [[CO1](Apply/HOCQ)]
- 6 + 6 = 12**

Group - C

4. (a) State the purpose of global object in the context of JavaScript. How "strict equality operator(===)" is different from "normal equality operator(==)". [[CO2](Analyse/IOCQ)]
- (b) What is destructuring assignment in the context of JavaScript? [[CO2](Analyse/IOCQ)]

- (c) Describe several techniques of object creation in the context of JavaScript with example. [[CO2](Apply/HOCQ)]
(2 + 2) + 3 + 5 = 12
5. (a) Describe arrow function in the context of JavaScript Array with example. [[CO2](Remember/LOCQ)]
 (b) Explain the concept of symbol in the context of JavaScript with example. [[CO2](Remember/LOCQ)]
 (c) Describe Typed Array in the context of JavaScript with example. [[CO2](Remember/LOCQ)]
4 + 4 + 4 = 12

Group - D

6. (a) Create a cookie using the servlet to store and display login information like username and password as entered by the user. [[CO4](Apply/HOCQ)]
 (b) Describe the different JSP elements in detail. [[CO3](Remember/LOCQ)]
6 + 6 = 12
7. (a) Create an application in JSP to redirect the request to any other page. [[CO4](Apply/HOCQ)]
 (b) How do <jsp:include/> and <jsp:forward/> actions differ from each other? [[CO3](Analyse/IOCQ)]
 (c) Explain the importance of <jsp:useBean> action with example. [[CO3](Analyse/IOCQ)]
6 + 3 + 3 = 12

Group - E

8. (a) Describe the Facelets in the context of Java Server Faces. [[CO5](Understand/LOCQ)]
 (b) Explain the resource handling process in the context of Java Server Faces. [[CO5](Analyse/IOCQ)]
 (c) Explain the process of binding HTTP methods in the context of RESTful Web Services. [[CO5](Analyse/IOCQ)]
4 + 4 + 4 = 12
9. (a) Describe the multiplicity in container-managed relationships in the context of Entity Beans. [[CO6](Remember/LOCQ)]
 (b) Discuss the importance of abstract schema in the context of Entity Beans. [[CO6](Analyse/IOCQ)]
 (c) What makes Message-Driven Beans different from Session and Entity Beans. [[CO6](Analyse/IOCQ)]
4 + 4 + 4 = 12

Cognition Level	LOCQ	IOCQ	HOCQ
Percentage distribution	39.58	36.46	23.96

Course Outcome (CO):

After the completion of the course students will be able to

1. Design static and dynamic web pages using HTML and CSS.
2. Apply JavaScript for client and server side scripting.
3. Understand servlet and JSP technologies.
4. Implement server side program using Servlet and JSP.
5. Understand the use of Java Server Faces framework and RESTful Web Services for Java-based web applications.
6. Understand the concept of Enterprise Java Beans and its types.

**LOCQ: Lower Order Cognitive Question; IOCQ: Intermediate Order Cognitive Question; HOCQ: Higher Order Cognitive Question.*