

Write 2 Characteristics of Expression Language. (2 Mark)

Answer:- (Page 459)

Multiple expressions can be combined and intermixed with static text. For example

```
$ { "Hello" ${user.firstName} ${user.lastName} }
```

Most importantly, if object/identifier is null, no NullPointerException would be thrown ☺. For example. If the expression written is:

```
${person.name}
```

Why yield() method use? (2 Mark)

Answer:- (Page 237)

- ❖ Allows any other threads of the same priority to execute (moves itself to the end of the priority queue)
- ❖ If all waiting threads have a lower priority, then the yielding thread resumes execution on the CPU

What is the hidden comment in JSP? (2 Mark)

Answer:- [Click here for detail](#)

A comment that documents the JSP page but is not sent to the client.

Examples :- `<%@ page language="java" %>`

Which method of ResultSetMetaData object is used to return the suggested column label for print out? (2 Mark)

Answer:- (Page 175)

The getColumnLabel() method returns the suggested column label for printouts

What is the purpose of wait(), notify() and notifyAll() methods? (3 Mark)

Answer:- [click here for detail](#)

The wait(), notify(), and notifyAll() methods are used to provide an efficient way for threads to wait for a shared resource. When a thread executes an object's wait() method, it enters the waiting state. It only enters the ready state after another thread invokes the object's notify() or notifyAll() methods..

What are the three stages of Servlet Lifecycle? (3 Mark)

Answer:- (Page 267)

A servlet passes through the following stages in its life.

- 1 Initialize
- 2 Service
- 3 Destroy

Advantages of using Custom Tags? (3 Mark)

Answer:- (Page 379)

- ❖ Provides cleaner separation of processing logic and presentation, than JavaBeans.
- ❖ Have access to all JSP implicit objects like out, request etc.
- ❖ Can be customized by specifying attributes.

How JSF does provide Navigation? (3 Mark)

Answer:- (Page 487)

Page navigation determines the control flow of a Web application. JSF provides a default navigational handler and this behavior can be configured in configuration file.

Difference between static and non static inner class? (3 Mark)

Answer: - [Click here for Detail](#)

A non-static inner class may have object instances that are associated with instances of the class's outer class. A static inner class does not have any object instances.

Which Five operators are used in Expression Language? (5 Mark)

Answer:- [Click here for detail](#)

Expression language can use the following five arithmetic operators to act on integer and floating point values:

- + operator for addition
- - operator for subtraction
- * operator for multiplication
- / operator for division
- % operator for remainder

What is Expression in JSP? Give an example. (5 Mark)

Answer:- (Page 335)

The format of writing a Java expression is: `<%= Java expression %>`

These expressions are evaluated, after converted to strings placed into HTML page at the place it occurred in JSP page Examples of writing Expressions are:

`<h2> Time: <%= new java.util.Date() %> </h2>`

will print current data & time after converting it to String

`<h2> Welcome: <%= request.getParameter("name")%> </h2>`

will print the name attribute

Difference between ServletContext and ServletConfig? (5 Mark)

Answer:- [Click here for detail](#)

ServletConfig is a servlet configuration object used by a servlet container used to pass information to a servlet during initialization. All of its initialization parameters can ONLY be set in deployment descriptor.

The ServletContext object is contained within the ServletConfig object, which the Web server provides the servlet when the servlet is initialized.

You can specify param-value pairs for ServletContext object in <context-param> tags in web.xml file.

The ServletConfig parameters are specified for a particular servlet and are unknown to other servlets.

The ServletContext parameters are specified for an entire application outside of any particular servlet and are available to all the servlets within that application.

ServletConfig defines an object generated by a servlet engine.

ServletContext defines an object to be created by a servlet engine.

• Disadvantage of Page-centered approach (2 marks)

Answer:- (Page 411)

The page-centric approach has lot of draw backs such as the code becomes a mixture of presentation, business and data access logic. The maintenance and up-gradation of the application becomes a nightmare.

• Methods of session tracking (2 marks)

Answer:- (Page 297)

- 1 Cookies
- 2 URL Rewriting
- 3 Hidden Fields

• What does finalization means? (2 marks)

Answer:- (Page 47)

When a finalize method is defined in a class, Java run time calls finalize() whenever it is about to recycle an object of that class.

• What does error 404 display? (3 marks)

Answer:- (Page 244)

Indicates that the requested resource is not available.

• **Why do we need Expression language?**

Answer:- (Page 451)

The Expression Language, not a programming or scripting language, provides a way to simplify expressions in JSP. It is a simple language that is geared towards looking up objects, their properties and performing simple operations on them. It is inspired from both the ECMAScript and the XPath expression language.

• **Jsp directive.**

Answer:- (Page 344)

JSP directives are used to convey special processing information about the page to JSP container. It affects the overall structure of the servlet that results from the JSP page. It enables programmer to:

- Specify page settings
- To Include content from other resources
- To specify custom-tag libraries

• **Difference of forward and send redirect.**

Answer:- [Click here for detail](#)

When you invoke a forward request, the request is sent to another resource on the server, without the client being informed that a different resource is going to process the request. This process occurs completely within the web container. When a sendRedirect method is invoked, it causes the web container to return to the browser indicating that a new URL should be requested. Because the browser issues a completely new request any object that are stored as request attributes before the redirect occurs will be lost. This extra round trip a redirect is slower than forward.

• **Jsp page directive? (5 marks)**

Answer:- (Page 344)

Give high level information about servlet that will result from JSP page. It can be used anywhere in the document. It can control.

- Which classes are imported
- What class the servlet extends
- What MIME type is generated
- How multithreading is handled
- If the participates in session
- Which page handles unexpected errors etc.

• **Request dispatchers include method? (5 marks)**

Answer:- (Page 282)

It allows a Servlet to include the results of another resource in its response. The two major differences from forward are:

- ❖ Data can be written to the response before an include
- ❖ The first Servlet which receive the request, is the one which finishes the response

It will be more cleared from the following figure. User sends a HTTPRequest to Servlet1. Servlet2 is called by Servlet1 by using include(request, response) method. The response generated by Servlet2 sends back to Servlet1. Servlet1 can also add its own response content and finally send it back to user.

(2 Marks)

Q1. What is the format in which the source code of Java converted after compilation? (2 Marks)

Answer:- (Page 17)

Java programs (Source code) are compiled into a form called Java bytecodes.

The Java compiler reads Java language source (.java) files, translates the source into Java bytecodes, and places the bytecodes into class (.class) files.

Q2. How many types of comments are used in JSP? (2 Marks)

Answer:- (Page 334)

JSP may contain the following elements.

- ❖ Directive Elements
- ❖ Scripting Elements
- ❖ Action Elements

Q3. How to track a user session in Servlet? (2 Marks)

Answer:- (Page 297)

Three typical solutions come across to accomplish session tracking. These are:

- 1 Cookies
- 2 URL Rewriting
- 3 Hidden Fields

Q4 Write briefly two characteristics of Expression Language? (2 Marks)

Answer:- rep

Q4. Why yield () method used? (2 Marks)

Answer:- rep

Q1. Which method is used to read an object through serialization?

Answer:- (Page 220)

readObject()

Q2. Explain your words that how Java bean is intended for use in some type of building tool?

Answer:- [Click here for detail](#)

A java bean is intended for use in some type of building tool, but a bean or set of beans may not have anything to do with the GUI of the resulting application. Most often the intent is that the bean is configurable using some GUI. The typical examples of non-graphical beans are Database access JavaBeans which result in nothing in GUI but may communicate with other Beans which are part of the application GUI.

Q3. What is expression language Nuggets?

Answer:- (Page 452)

Syntax of EL

Expressions & identifiers

Arithmetic, logical & relational operators

Automatic type conversion

Access to beans, arrays, lists & maps

Access to set of implicit objects

Q4. What are the benefits of using Packages? Explain.

Answer:- (Page 328)

Packages are nothing more than the way we organize files into different directories according to their functionality, usability as well as category they should belong to.

Q5. What is the purposes of wait (), notify, notify all() methods?

Answer:- rep

Q1 Types of layers? Briefly explain each. (5 Marks)

Answer:- (Page 436)

Presentation Layer

It provides a user interface to the client/user to interact with the application. This is the only part of the application visible to client.

Its job list includes collecting user's input, validating user's input (on client side using JavaScript like technologies OR on server side), presenting the results of the request made by the user and controlling the screen flow (which page/view will be visible to the user).

Business Layer

Also called application layer, it is only concerned with the application specific functionality. It is used to implement business rules and to perform business tasks.

For example, in a banking system, this layer will provide the functionality of banking functions such as opening an account, transferring of balance from one account to another, Calculation of taxes etc.

Data Layer

It is concerned with the management of the data & data sources of the system. Data sources can be database, XML, web services, flat file etc. Encapsulates data retrieval & storage logic For example, the address book application needs to retrieve all person records from a database to display them to the user.

Q2: What is expression in JSP? Give an example (5 Marks)

Answer:- rep

Q3: Why tracking is necessary ?(5 Marks)

Answer:- (Page 295)

Many applications require a series of requests from the same client to be associated with one another. For example, any online shopping application saves the state of a user's shopping cart across multiple requests. Web-based applications are responsible for maintaining such state, because HTTP protocol is stateless. To support applications that need to maintain state, Java Servlet technology provides an API for managing sessions and allows several mechanisms for implementing sessions.

Name any two logical layers of we application?

Answer:- (Page 321)

- ❖ Presentation Layer
- ❖ Business Layer
- ❖ Data Layer

Write briefly 2 characteristic of EL?

Answer:- [Click here for detail](#)

- Dynamically write data, such as user input into forms, to JavaBeans components
- Invoke arbitrary static and public methods
- Dynamically perform arithmetic operations

Why do we use session tracking in HTTP servlets?

Answer:- [Click here for detail](#)

In HttpServlet we can use Session Tracking to track the user state. Session is required if you are developing shopping cart application or in any e-commerce application.

How JSP pages are informed about the error?

Answer:- (Page 393)

JSP pages are informed about the error page by setting errorPage attribute of page directive

Write Advantages of JASP over Servlet?

Answer:- (Page 330)

- ❖ JSPs provide more convenient way to create HTML
- ❖ JSPs can use standard front end tools (e.g., UltraDev)
- ❖ JSPs divide and conquer the problem of presentation and business logic.

What is Significance of error Pages?

Answer:- (not confirm)

Error Pages enables you to customize error messages. You can even hide them from the user's view entirely, if you want.

Defining and Using Error Pages

- isErrorPage attribute of a page directive is used to declare a JSP as an error page.
- JSP pages are informed about the error page by setting errorPage attribute of page directive

Write features that JSP provide?

Answer:- (Page 330)

Versus ASP or ColdFusion

- ❖ JSPs offer better language for dynamic part i.e. java
- ❖ JSPs are portable to multiple servers and operating systems

Versus PHP

- ❖ JSPs offer better language for dynamic part
- ❖ JSPs offer better tool support

Versus pure servlets

- ❖ JSPs provide more convenient way to create HTML
- ❖ JSPs can use standard front end tools (e.g., UltraDev)
- ❖ JSPs divide and conquer the problem of presentation and business logic.

How can we encode URL which is sent to Client?

Answer:- (Page 317)

HttpServletResponse provides two methods to perform encoding

- ❖ String encodeURL(String URL)
- ❖ String encodeRedirectURL(String URL)

If Cookies are disabled, both methods encode (rewrite) the specific URL to include the session ID and returns the new URL. However, if cookies are enabled, the URL is returned unchanged.

What are the types of layers?

Answer:- rep

1. What is the advantage of jsp over PHP? (2marks)

Answer:- rep

2. For what purpose c:remove tag is used. (2marks)

Answer:- (Page 472)

c:remove action is used to delete a scoped variable, and takes two attributes.

3. What are implicit objects?? list any two. (2marks)

Answer:- (Page 339)

To simplify code in JSP expressions and scriptlets, you are supplied with eight automatically defined variables, sometimes called implicit objects.

4. Garbage collection. (2marks)

Answer:- (Page 47)

Java performs garbage collection and eliminates the need to free objects explicitly. When an object has no references to it anywhere except in other objects that are also unreferenced, its space can be reclaimed.

5. In which situation expression language can be used. (2marks)

Answer:- rep

1. Differentiate between Sequential Execution and multithreading. (3marks)

Answer:- (Page 226)

Every program has atleast one thread. Programs without multithreading executes sequentially. That is, after executing one instruction the next instruction in sequence is executed. If a function is called then until the completion of the function the next instruction is not executed. Similarly if there is a loop then instructions after loop only gets executed when the loop gets completed.

2. Expression language nuggets. (3marks)

Answer:- rep

3. Name three stages of servlet life cycle. (3marks)

Answer:- rep

1. What are packages? And how they are organized? (5marks)

Answer:- (Page 328)

Many times when we get a chance to work on a small project, one thing we intend to do is to put all java files into one single directory (folder). It is quick, easy and harmless. However if our small project gets bigger, and the number of files is increasing, putting all these files into the same directory would be a nightmare for us. In java we can avoid this sort of problem by using Packages.

In simple terms, a set of Java classes organized for convenience in the same directory to avoid the name collisions. Packages are nothing more than the way we organize files into different directories according to their functionality, usability as well as category they should belong to.

2. What is the difference between custom tags and javabeans? (5marks)

Answer:- [Click here for detail](#)

In the context of a JSP page, both accomplish similar goals but the differences are:

Custom Tags	JavaBeans
Can manipulate JSP content.	Can't manipulate JSP content.
Custom tags can simplify the complex operations much better than the bean can. But require a bit more work to set up.	Easier to set up.
Used only in JSPs in a relatively self-contained manner.	Can be used in both Servlets and JSPs. You can define a bean in one Servlet and use them in another Servlet or a JSP page.

Write the lifecycle of servlet?

Answer:- rep

What is servlet context mean?

Answer:- (Page 281)

ServletContext belongs to one web application. Therefore it can be used for sharing resources among servlets in the same web application.

What is meant by hidden comment?

Answer:- rep

What is validator? write types of built in validator? 5 marks

Answer:- (Page 486)

Validators make input validation simple and save developers hours of programming. JSF provides a set of validator classes for validating input values entered into input components. Alternatively, you can write your own validator if none of the standard validators suits your needs. Some built-in validators are:

Muhammad Moaaz Siddiq MCS (3rd)

mc100401285@gmail.com

Campus:- Institute of E-Learning & Modern Studies
(IEMS) Samundari

❖ **DoubleRangeValidator**

Any numeric type, between specified maximum and minimum values

❖ **LongRangeValidator**

Any numeric type convertible to long, between specified maximum and minimum values

❖ **LengthValidator**

Ensures that the length of a component's local value falls into a certain range (between minimum & maximum). The value must be of String type.

Muhammad Moaaz Siddiq MCS (3rd)

mc100401285@gmail.com

Campus:- Institute of E-Learning & Modern Studies
(IEMS) Samundari