

**18PMC424 J2EE Technologies**  
**K1 QUESTIONS**

**Unit I**

1) It is lightweight. It supports pluggable look and feel. It follows MVC (Model View Controller) architecture.

The following specifies the advantages of

- A) Swing
- B) AWT
- C) Both A & B
- D) None of the above

Ans: A

2) Swing is not a part of JFC (Java Foundation Classes) that is used to create GUI application?

- A) True
- B) False

Ans: A

3) Which class provides many methods for graphics programming?

- A) java.awt
- B) java.Graphics
- C) java.awt.Graphics
- D) None of the above

Ans: C

4) Implement the Listener interface and overrides its methods. Register the component with the Listener

The Following steps are required to perform

- A) Exception Handling
- B) String Handling
- C) Event Handling
- D) None of the above

Ans: C

5) The ActionListener interface is not used for handling action events?

- A) True
- B) False

Ans: B

6) The ActionListener interface is used for handling action events, For example, it's used by a

- A) JButton
- B) JCheckbox
- C) JMenuItem
- D) All of these

Ans: D

7) `JFrame myFrame = new JFrame ();` Any command (such as the one listed above) which creates a new object of a specific class (in this case a new `JFrame` object called `myFrame`) is generally called a ...

- A) Constructor
- B) Layout manager
- C) Parameter
- D) GUI

Ans:A

8) MVC Architecture stands for

- a). Model View Controller
- b). Mode View Control
- c). Maximum View Control
- d). None

Ans:A

9) Which is the container that doesn't contain title bar and MenuBars but it can have other components like button, textfield etc?

- a. Window
- b. Frame
- c. Panel
- d. all the above

Ans:C

10) Which is the passive control that do not support any interaction with the user?

- a. JList
- b. JLabel
- c. JTable
- d. JTree

Ans:B

11). Component used for displaying data in tabular

- a. JList
- b. JTextArea
- c. JTable
- d. JTree

Ans:C

12) Java Bean is a \_\_\_\_\_ technology

- a. Component
- b. scripting
- c. middle tier
- d. None

Ans:A

13) Manifest file is a special file that contains information about the files packed in

- a. JAR file
- b. GIF
- c. JPEG
- d. all the above

Ans:A

14) Which of the following is not true about Java beans?

- a) Implements java.io.Serializable interface
- b) Extends java.io.Serializable class
- c) Provides no argument constructor
- d) Provides setter and getter methods for its properties

Ans:b

15) Which file separator should be used by MANIFEST file?

- a) /
- b) \
- c) -
- d) //

Ans: a

16) Which of the following is correct error when loading JAR file with duplicate name?

- a) java.io.NullPointerException
- b) java.lang.ClassNotFound
- c) java.lang.ClassFormatError
- d) java.lang.DuplicateClassError

Ans: c

17) Java Beans are extremely secured?

- a) True
- b) False

Ans: b

18) Which of the following is not a feature of Beans?

- a) Introspection
- b) Events
- c) Persistence
- d) Serialization

Ans: d

## UNIT II

19) Which services are provided to EJB components by the EJB container?

- a. Transaction support
- b. Persistence support
- c. Naming support
- d. All mentioned above

Ans: d

20) Which case of a session bean obtains the UserTransaction object via the EJBContext using the getUserTransaction() method in EJB transaction management?

- a. Bean-managed transactions
- b. Container-managed transactions
- c. Both A & B
- d. None of the above

Ans: a

21) EJB QL is a Query Language provided for navigation across a network of enterprise beans and dependent objects defined by means of container managed persistence.

- a. True
- b. False

Ans: a

22) A message driven bean is like a stateful session bean that encapsulates the business logic and doesn't maintain state.

- a. True
- b. False

Ans: b

23) Abbreviate the term JMS?

- a. Java Message Service
- b. Java Monitor Service
- c. Java Message Session
- d. Java Monitor Session

Ans: a

24) JMS is mainly used to send and receive message from one application to another.

- a. True
- b. False

Ans: a

25) Which session bean maintain their state between client invocations but are not required to maintain their state across server crashes or shutdowns?

- a. Stateful Session Bean
- b. Stateless Session Bean
- c. Singleton Session Bean
- d. None of the above

Ans: c

26) Which EJB container must provide an implementation of Java Naming and Directory Interface (JNDI) API to provide naming services for EJB clients and components?

- a. Transaction support
- b. Persistence support
- c. Naming support
- d. All mentioned above

Ans: c

27) EJB is a specification for J2EE server, not a product; Java beans may be a graphical component in IDE.

- a. True
- b. False

Ans: a

28) A session bean represents a multiple clients inside the Application Server.

- a. True

b. False

Ans: b

29) Which component does the Entity bean represent the persistent data stored in the database?

- a. Server-side component
- b. Client-side component
- c. server and client side component
- d. None of the above

Ans: a

30) EJB is like COM, Abbreviate the term COM?

- a. Component Object Model
- b. Component Oriented Model
- c. Common Object Model
- d. Common Oriented Model

Ans: a

31) JMS is also known as a messaging service.

- a. True
- b. False

Ans: a

32) What represents a persistent global data from the database?

- a. Entity Bean
- b. Session Bean
- c. Both A & B
- d. None of the above

Ans: a

33) Which component does the Entity bean represents the persistent data stored in the database?

- a. Server-side component
- b. Client-side component
- c. server and client side component
- d. None of the above

Ans: a

34) In EJB, middleware services are provided by EJB Container automatically.

- a. True
- b. False

Ans: a

35) Which middleware services are provided by EJB?

- a. Security
- b. Transaction Management
- c. Both A & B
- d. None of the above

Ans: c

36) Which server-side component is required to be deployed on the server?

- a. EJB
- b. RMI
- c. Both A & B
- d. None of the above

Ans: a

37) Which type of instances retain no data or conversational state for a specific client?

- a. Message-Driven Bean
- b. Session Bean
- c. Entity Bean
- d. None of the above

Ans: a

38) EJB technology is built on the top of Socket Programming

- a. True
- b. False

ans: b

### **UNIT III**

39. How constructor can be used for a servlet?

- a) Initialization
- b) Constructor function
- c) Initialization and Constructor function
- d) Setup() method

Ans: c

40. Can servlet class declare constructor with ServletConfig object as an argument?

- a) True
- b) False

Ans: b

41. Java Servlets are efficient and powerful solution for creating .....for the web.

- A) dynamic content
- B) static content
- C) hardware
- D) both a and b

Ans: A

42. .... is the first phase of the servlet life cycle.

- A) Initialization
- B) Service
- C) Destruction
- D) Both a and b

Ans : a

43. The service phase of the servlet life cycle represents all interactions with requests until

the servlet is .....

- A) created
- B) running
- C) initiated
- D) destroyed

Ans: d

44. GET methods are great for sending .....amounts of information that you do not mind having visible in a URL.

- A) negligible
- B) huge
- C) small
- D) both and b

Ans: c

45. Several vendors are adding ..... to their existing database .....

- A) JDOBC, middle-ware products
- B) JDBC drivers, upper-ware products
- C) middle-ware products, JDOBC drivers
- D) JDBC drivers, middle-ware products

Ans: d

46. Which of the following code is used to get an attribute in a HTTP Session object in servlets?

- a) session.getAttribute(String name)
- b) session.alterAttribute(String name)
- c) session.updateAttribute(String name)
- d) session.setAttribute(String name)

Ans: a

47. A servlet needs to acquire a data source through a JNDI naming lookup. Which of the following is the best place to do this?

- a. Constructor
- b. init method
- c. service method
- d. doGet method
- e. doPostmethod

Ans: b

48. What's the difference between servlets and applets? a. Servlets executes on Servers, where as

- a.Applets executes on Browser
- b. Servlets have no GUI, where as an Applet has GUI
- c. Servlets creates static web pages, where as Applets creates dynamic web pages
- d. Servlets can handle only a single request, where as Applet can handle multiple requests

Ans: a and b

49. Which of the following code retrieves the body of the request as binary data?

- a) `DataInputStream data = new InputStream()`
- b) `DataInputStream data = response.getInputStream()`

- c) `DataStream data = request.getInputStream()`
- d) `DataStream data = request.fetchInputStream()`

Ans: c

50. When `destroy()` method of a filter is called?

- a) The `destroy()` method is called only once at the end of the life cycle of a filter
- b) The `destroy()` method is called after the filter has executed `doFilter` method
- c) The `destroy()` method is called only once at the beginning of the life cycle of a filter
- d) The `destroyer()` method is called after the filter has executed

Answer: a

51. Which of the following is true about servlets?

- a) Servlets execute within the address space of web server
- b) Servlets are platform-independent because they are written in java
- c) Servlets can use the full functionality of the Java class libraries
- d) Servlets execute within the address space of web server, platform independent and uses the functionality of java class libraries

Ans: d

52. Which method is used to specify before any lines that uses the `PrintWriter`?

- a. `setPageType()`
- b. `setContextType()`
- c. `setContentType()`
- d. `setResponseType()`

Ans: c

53. Which of the following are the session tracking techniques?

- a. URL rewriting, using session object, using response object, using hidden fields
- b. URL rewriting, using session object, using cookies, using hidden fields
- c. URL rewriting, using servlet object, using response object, using cookies
- d. URL rewriting, using request object, using response object, using session object

Correct answer: b

54. The `getSession()` method with „true“ as its parameter [ `getSession(true)` ] it will return the appropriate session object when

- a. the session is completed
- b. the session object is passed to another method
- c. the session does not exists
- d. the session is existing

Ans: d

55. A servlet maintain session in

- a. Servlet container
- b. Servlet context
- c. Servlet request heap
- d. Servlet response heap

Ans: b

56. Servlet mapping defines

- a. an association between a URL pattern and a servlet

- b. an association between a URL pattern and a request page
- c. an association between a URL pattern and a response page
- d. All of the above

Ans: a

57. The life cycle of a servlet is managed by

- a. servlet context
- b. servlet container
- c. the supporting protocol (such as http or https)
- d. all of the above

Ans: b

58. The init parameter name and value pairs that are defined in web.xml file are handled by

- a. ServletConfig object
- b. ServletContext object
- c. ServletRequest object
- d. ServletResponse object

Ans: a

59. How many ServletContext objects are available for an entire web application?

- a. One each per servlet
- b. One each per request
- c. One each per response
- d. Only one

Ans: d

60) Which of the following package contains servlet classes?

- a) javax.servlet
- b) javax.servlet.http
- c) Both of the above
- d) None of the above

Ans: c

## UNIT IV

61. Which page directive should be used in JSP to generate a PDF page?

- a) contentType
- b) generatePdf
- c) typePDF
- d) contentPDF

Ans: a

62. Which tag should be used to pass information from JSP to included JSP?

- a) Using <%jsp:page> tag
- b) Using <%jsp:param> tag
- c) Using <%jsp:import> tag
- d) Using <%jsp:useBean> tag

Ans: a

63. Application is instance of which class?

- a) javax.servlet.Application
- b) javax.servlet.HttpContext
- c) javax.servlet.Context
- d) javax.servlet.ServletContext

Ans: d

64. \_jspService() method of HttpJspPage class should not be overridden.

- a) True
- b) False

Answer: a

65. Which option is true about session scope?

- a) Objects are accessible only from the page in which they are created
- b) Objects are accessible only from the pages which are in same session
- c) Objects are accessible only from the pages which are processing the same request
- d) Objects are accessible only from the pages which reside in same application

Ans: b

66. Default value of autoFlush attribute is?

- a) true
- b) false

Ans: a

67. 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

Ans: c.

68. "request" is instance of which one of the following classes?

- a) Request
- b) HttpRequest
- c) HttpServletRequest
- d) ServletRequest

Ans: c

69. Which is not a directive?

- a) include
- b) page
- c) export
- d) useBean

Answer: c

70. Which is mandatory in tag?

- a) id, class
- b) id, type
- c) type, property
- d) type, id

Ans: a

71. Which one of the following is correct for directive in JSP?

- a) `<%@directive%>`
- b) `<%!directive%>`
- c) `<%directive%>`
- d) `<%=directive%>`

Ans: a

72. Which of the following action variable is used to include a file in JSP?

- a) `jsp:setProperty`
- b) `jsp:getProperty`
- c) `jsp:include`
- d) `jsp:plugin`

Ans: c

73. Which attribute uniquely identification element?

- a) ID
- b) Class
- c) Name
- d) Scope

Ans: a.

74. "out" is implicit object of which class?

- a) `javax.servlet.jsp.PrintWriter`
- b) `javax.servlet.jsp.SessionWriter`
- c) `javax.servlet.jsp.SessionPrinter`
- d) `javax.servlet.jsp.JspWriter`

Ans: d

75. Which object stores references to the request and response objects?

- a) `sessionContext`
- b) `pageContext`
- c) `HttpSession`
- d) `sessionAttribute`

Ans: b

76. What temporarily redirects response to the browser?

- a) `<jsp:forward>`
- b) `<%@directive%>`
- c) `response.sendRedirect(URL)`
- d) `response.setRedirect(URL)`

Ans: c

77. Which tag is used to set a value of a JavaBean?

- a) `<c:set>`
- b) `<c:param>`
- c) `<c:choose>`
- d) `<c:forward>`

Ans: a

78. Can `<!--comment-->` and `<%comment-%>` be used alternatively in JSP?

- a) True
- b) False

Answer: b

79. Java code is embedded under which tag in JSP?

- a) Declaration
- b) Scriptlet
- c) Expression
- d) Comment

Answer: b

80. Which of the following is not a directive in JSP?

- a) page directive
- b) include directive
- c) taglib directive
- d) command directive

Ans: d

#### UNIT V

81) In RMI Architecture which layer intercepts method calls made by the client/redirects these calls to a remote RMI service?

- a. Stub & Skeleton Layer
- b. Application Layer
- c. Remote Reference Layer
- d. Transport Layer

Ans: a

82) Which is an object, acts as a gateway for the client side, all the outgoing requests are routed through it and it resides at the client side and represents the remote object?

- a. Stub
- b. Skeleton
- c. Both A & B
- d. None of the above

Ans: a

83) Java supports RMI, RMI stands for?

- a. Random Method Invocation
- b. Remote Memory Interface
- c. Remote Method Invocation
- d. Random Method Invocation

Ans: c

84) An RMI Server is responsible for \_\_\_\_\_

- a. Creating an instance of the remote object
- b. Exporting the remote object
- c. Binding the instance of the remote object to the RMI registry
- d. All mentioned above

Ans: b

85) Abbreviate the term DGC?

- a. Digital Garbage Collection
- b. Distributed Garbage Collection
- c. Distributed Garbage Connection
- d. None of the above

Ans: b

86) RMI and EJB, provides services to access an object running in another JVM (known as remote object).

- a. True
- b. False

Ans: a

87) In RMI, the objects are passed by \_\_\_\_\_.

- a. Value
- b. Reference
- c. Value and Reference
- d. None of the above

Ans: a

88) RMI uses a layered architecture; each of the layers could be enhanced or replaced without affecting the rest of the system.

- a. True
- b. False

Ans: a

89) What are the exceptions which have to be handled in a RMI client program?

- a. RemoteException
- b. NotBoundException
- c. MalformedURLException
- d. All mentioned above

Ans: d

90) RMI is a server-side component; It is not required to be deployed on the server.

- a. True
- b. False

Ans: b

91) Which package is used for Remote Method Invocation (RMI)?

- a. java.lang.rmi
- b. java.lang.reflect
- c. java.applet
- d. java.rmi

Ans: d

92) Which program obtains a remote reference to one or more remote objects on a server and then invokes methods on them in an RMI application?

- a. Server
- b. Client
- c. Both A & B
- d. None of the above

Ans: b

93) Which objects are used by RMI for communicating with the remote object?

- a. Stub
- b. Skeleton
- c. Both A & B
- d. None of the above

Ans: c

94) RMI Architecture consists of how many layers?

- a. 5
- b. 3
- c. 4
- d. 2

Ans: c

95) Which method in naming class specifies a name to the remote object?

- a. bind(string name)
- b. rebind(string name)
- c. Both A & B
- d. None of the above

Ans: a

96) 1099 is the default port used by RMI Registry.

- a. True
- b. False

Ans: a

97) RMI uses which protocol on top of TCP/IP (an analogy is HTTP over TCP/IP)?

- a. Java Remote Method Protocol (JRMP)
- b. Internet Inter-ORB Protocol (IIOP)
- c. Jini Extensible Remote Invocation (JERI)
- d. All mentioned above

Ans: a

98) Which method of the Naming class (found in java.rmi) is used to update the RMI registry on the server machine?

- a. rebind ()
- b. lookup()
- c. Both A & B
- d. None of the above

Ans: a

99) What is the built on top of the socket programming?

- a. EJB
- b. RMI
- c. Both A & B
- d. None of the above

Ans: b

100) In RMI which layer defines and supports the invocation semantics of the RMI connection and this layer maintains the session during the method call?

- a. The Stub & Skeleton Layer
- b. The Application Layer
- c. The Remote Reference Layer
- d. The Transport Layer

Ans: c

101) In RMI Distributed object applications need to

- a. Locate remote objects
- b. Communicate with remote objects
- c. Load class definitions for objects that are passed around
- d. All mentioned above

Ans: d

# P.G DEPARTMENT OF COMPUTER APPLICATIONS

## J2EE Technologies -18PMC424

### K2 LEVEL QUESTION& ANSWER

#### UNIT I

**1. Why does it take so much time to access an Applet having Swing Components the first time?**

**Ans.** behind every swing component are many Java objects and resources. This takes time to create them in memory.

**2. What's Java Swing?**

Swing is a GUI toolkit for Java. It is one part of the Java Foundation Classes (JFC). Swing includes graphical user interface (GUI) widgets such as text boxes, buttons, split-panes, and tables.

**3. What is JFC?**

**Ans.** JFC stands for Java Foundation Classes. The Java Foundation Classes (JFC) are a set of Java class libraries provided as part of Java 2 Platform, Standard Edition (J2SE) to support building graphics user interface (GUI) and graphics functionality for client applications that will run on popular platforms such as Microsoft Windows, Linux, and Mac OSX.

**4. What are the differences between Swing and AWT?**

**Ans.** AWT is heavy-weight components, but Swing is light-weight components. AWT is OS dependent because it uses native components, But Swing components are OS independent. We can change the look and feel in Swing which is not possible in AWT. Swing takes less memory compared to AWT. For drawing AWT uses screen rendering where Swing uses double buffering.

**5. What are heavyweight components?**

**Ans.** A heavyweight component is one that is associated with its own native screen resource (commonly known as a peer).

## 6. What is lightweight component?

**Ans.** A lightweight component is one that "borrows" the screen resource of an ancestor (which means it has no native resource of its own -- so it's "lighter").

## 7. What is a layout manager?

**Ans.** A layout manager is an object that is used to organize components in a container.

## 8. What is a Rootpane?

When we create a **JFrame** object, a **JRootPane** is automatically created and it occupies the empty part of the frame. So, the **JRootPane** is like the base of the photo frame. This means that all the content in the frame should lie on top of it.

## 9. What is a ContentPane?

the **JRootPane** has two children. There is an optional **MenuBar** and a **ContentPane**. The menu bar occupies the upper part while the rest of the part is used by the **ContentPane**.

the **ContentPane** is very similar to the photograph in the photo frame. It holds the visible content. Whenever we add a component to a **JFrame** using a method like *frame.add(component)*, the **ContentPane** is implicitly called and the component is added to it

## 10. What is a Java Bean?

**Ans.** Java Beans are usual Java classes which adhere to certain coding conventions:

- ▶ Implements java.io.Serializable interface
- ▶ Provides no argument constructor
- ▶ Provides getter and setter methods for accessing it's properties.

## 11. What is introspection?

**Introspection** is the automatic process of analyzing a bean's design patterns to reveal the bean's properties, events, and methods. This process controls the publishing and discovery of bean operations and properties.

## 12. What is BDK?

The **Bean Developer Kit (BDK)**, available from the **Java Soft** site, is a simple example of a tool that enables you to create, configure, and connect a set of **Beans**. There is also a set of sample **Beans** with their source code.

## 13. What is BeanInfoInterface

**BeanInfo** is an **interface** implemented by a class that provides explicit information about a **Bean**. It is used to describe one or more feature sets of a **Bean**, including its properties, methods, and events.

#### **14. What is a JavaBean API?**

The JavaBeans functionality is provided by a set of classes and interfaces in the java.beans package which is referred to as JavaBean API.

#### **15. Which component is used to display data in a hierarchical format?**

JTree is the component which displays data in hierarchical format

## **UNIT II**

#### **16. What is RMI?**

RMI stands for Remote Method Invocation. The nicest way to think about this problem is that some object happens to live on another machine, and that you can send a message to the remote object and get a result as if the object lived on your local machine. This simplification is exactly what Java Remote Method Invocation (RMI) allows you to do.

#### **17. List the RMI Architecture?**

**Ans.** RMI uses a layered architecture, it has Application Layer, Stub & Skeleton Layer, Remote Reference Layer and Transport layer

#### **18. What are the services in RMI ?**

**Ans.** An RMI "service" could well be any Java method that can be invoked remotely. The other service is the JRMP RMI naming service which is a lookup service.

#### **19. What is Remote Procedure Calls, RPC?**

RPC stands for Remote Procedure Call. It is also called as inter-process communication. RPC extends the normal procedure calls across the network which is necessary in distributed computing models and for harnessing the power of the multiple processors.

#### **20. What is Registry Service for RMI?**

**Ans.** The registration of the remote object must be done by the server in order for the client to look it up, is called the RMI Registry. In RMI, the client must contact an RMI registry, so that the server side application will be able to contact the client's registry which points the client in the direction of the service. The client registers the service with the registry so that it is transparent to even for the server.

#### **21. How to bind an object to the registry.**

**Ans.** If an object implements the java.rmi.Remote interface, an object is to be bound to registry context. Each registry context implements the Referenceable interface.

## **22. What is object serialization in RMI?**

To marshal and unmarshal the parameters involves the object serialization and does not truncate types.

The methods of local object and their bytecodes are not passed directly in the ObjectOutputStream. At times the name of the class of the objects may be needed that is to be loaded by the receiver if at all the class is not available locally. Just like the names of the classes, the class files themselves will not be serialized. All classes must load during the process of deserialization using the normal mechanisms of class loading.

## **23. What is the role of Remote Interface in RMI?**

**Ans.** Remote interfaces are defined by extending ,an interface called Remote provided in the java.rmi package. The methods must throw RemoteException. But application specific exceptions may also be thrown.

## **24. Explain marshalling and demarshalling.**

**Ans.** During communication between two machines through RPC or RMI, parameters are packed into a message and then sent over the network. This packing of parameters into a message is called marshalling.

On the other side these packed parameters are unpacked from the message which is called unmarshalling.

## **25. What is a skeleton in RMI?**

**Ans.** Server side stub is referred to as a skeleton.

## **26. Explain the role of stub in RMI.**

**Ans.** The role of the stubs is to marshal and unmarshal the messages that are sent and received on the client or the server side.

## **27. What is Unicast and Multicast object?**

**Ans.** The difference between unicast and multicast is that in unicast approach the sender sends the data stream to a single receiver at a time. Thus there is one to one communication.

In a multicast the sender and the interested receivers communicate. This is one to many communication. This communication can take place between data terminals spread across various LANs too.

## **UNIT III**

## **28. What is Servlet?**

**Ans.** A servlet is a Java technology-based Web component, managed by a container called servlet container or servlet engine, that generates dynamic content and interacts with web clients via a request/response paradigm.

**29. Why is Servlet so popular?**

**Ans.** Because servlets are platform-independent Java classes that are compiled to platform-neutral byte code that can be loaded dynamically into and run by a Java technology-enabled Web server.

**30. What is a session?**

**Ans.** The session is an object used by a servlet to track a user's interaction with a Web application across multiple HTTP requests.

**31. What are the different ways we can maintain state between requests?**

**Ans.** Following are the different ways of maintaining state's between stateless requests:-

- >> URL rewriting
- >> Cookies
- >> Hidden fields
- >> Sessions

**32. Define cookies**

**Cookies** are text files stored on the client computer and they are kept for various information tracking purpose. Java **Servlets** transparently supports **HTTP cookies**. There are three steps involved in identifying returning users – Server script sends a **set of cookies** to the browser.

**33. What are advantages of servlets over CGI?**

**Ans.** In CGI for every request there is a new process started which is quiet an overhead. In servlets JVM stays running and handles each request using a light weight thread. In CGI if there are 5000 request then 5000 CGI program is loaded in memory while in servlets there are 5000 thread and only one copy of the servlet class.

**34. What is servlet context ?**

**Ans.** The servlet context is an object that contains a servlet's view of the Web application within which the servlet is running. Using the context, a servlet can log events, obtain URL references to resources, and set and store attributes that other servlets in the context can use.**35. What's the difference between GenericServlet and HttpServlet?**

**36. Which interface must be implemented by all servlets?**

**Ans.** Servlet interface.

**UNIT IV**

**37. What is a JSP and what is it used for?**

**Ans.** Java Server Pages (JSP) is a platform independent presentation layer technology that comes with SUN's J2EE platform. JSPs are normal HTML pages with Java code pieces embedded in them. JSP pages are saved to \*.jsp files. A JSP compiler is used in the background to generate a Servlet from the JSP page.

### **38. What are the two kinds of comments in JSP and what's the difference between them?**

**Ans.** `<%-- JSP Comment --%>`  
`<!-- HTML Comment -->`

### **39. What is JSP technology?**

JavaServer Pages technology enables you to generate dynamic web content, such as HTML, DHTML, XHTML, and XML files, to include in a Web application. JSP files are one way to implement server-side dynamic page content.

### **40. What is JSP page?**

**Ans.** A JSP page is a text-based document that contains two types of text: static template data, which can be expressed in any text-based format such as HTML, SVG, WML, and XML, and JSP elements, which construct dynamic content.

### **41. What are the implicit objects?**

**Ans.** Implicit objects are objects that are created by the web container and contain information related to a particular request, page, or application.

### **42. List the JSP scripting elements and what are they?**

**Ans.** There are three scripting language elements:  
--declarations  
--scriptlets  
--expressions

### **43. What is a Declaration?**

**Ans.** A declaration declares one or more variables or methods for use later in the JSP source file.

A declaration must contain at least one complete declarative statement. You can declare any number of variables or methods within one declaration tag, as long as they are separated by semicolons. The declaration must be valid in the scripting language used in the JSP file.

`<%! somedeclarations %>`

### **44. What is an Expression?**

**Ans.** An expression tag contains a scripting language expression that is evaluated, converted to a String, and inserted where the expression appears in the JSP file. Because the value of an

expression is converted to a String, you can use an expression within text in a JSP file. Like

```
<%= someexpression %>
```

```
<%= (new java.util.Date()).toLocaleString() %>
```

#### **45. What is a Scriptlet?**

**Ans.** A scriptlet can contain any number of language statements, variable or method declarations, or expressions that are valid in the page scripting language. Within scriptlet tags, you can

1. Declare variables or methods to use later in the file (see also Declaration).
2. Write expressions valid in the page scripting language (see also Expression).
3. Use any of the JSP implicit objects or any object declared with a `<jsp:useBean>` tag.

You must write plain text, HTML-encoded text, or other JSP tags outside the scriptlet.

Scriptlets are executed at request time, when the JSP engine processes the client request. If the scriptlet produces output, the output is stored in the out object, from which you can display it.

## **UNIT V**

#### **46. What are the different kinds of enterprise beans?**

**Ans.** Stateless session bean- An instance of these non-persistent EJBs provides a service without storing an interaction or conversation state between methods. Any instance can be used for any client.

Stateful session bean- An instance of these non-persistent EJBs maintains state across methods and transactions. Each instance is associated with a particular client.

Entity bean- An instance of these persistent EJBs represents an object view of the data, usually rows in a database. They have a primary key as a unique identifier. Entity bean persistence can be either container-managed or bean-managed.

Message-driven bean- An instance of these EJBs is integrated with the Java Message Service (JMS) to provide the ability for message-driven beans to act as a standard JMS message consumer and perform asynchronous processing between the server and the JMS message producer.

#### **47. What is Session Bean?**

**Ans.** A session bean is a non-persistent object that implements some business logic running on the server. One way to think of a session object is as a logical extension of the client program that runs on the server.

Session beans are used to manage the interactions of entity and other session beans, access resources, and generally perform tasks on behalf of the client.

There are two basic kinds of session bean: stateless and stateful.

#### **48. What is Entity Bean?**

An "*Entity Bean*" is a type of Enterprise JavaBean, a server-side Java EE component, that represents persistent data maintained in a database. An *entity bean* can manage its own persistence (*Bean managed persistence*) or can delegate this function to its EJB Container (*Container managed persistence*).

#### **49. What do you mean by EJB?**

**Ans.** Enterprise java bean is a server side component which runs on application server or we call container, developed for the purpose of distributed and enterprise level application .container will provide support for system level services like Transaction Management, security which make developer task easy and he can focus on business logic.

#### **50. What is bean managed transaction?**

**Ans.** If a developer doesn't want a Container to manage transactions, it's possible to implement all database operations manually by writing the appropriate JDBC code. This often leads to productivity increase, but it makes an Entity Bean incompatible with some databases and it enlarges the amount of code to be written. All transaction management is explicitly performed by a developer.**51. What technologies are included in J2EE?**

**Ans.** The main technologies in J2EE are: Enterprise JavaBeans™ (EJBs™), JavaServerPages™ (JSPs™), Java Servlets, the Java Naming and Directory Interface™ (JNDI™), the Java Transaction API (JTA), CORBA, and the JDBC™ data access API.

#### **52. What is software architecture of EJB?**

**Ans.** Session and Entity EJBs consist of 4 and 5 parts respectively:

1. A remote interface (a client interacts with it),
2. A home interface (used for creating objects and for declaring business methods),
3. A bean object (an object, which actually performs business logic and EJB-specific operations).

4. A deployment descriptor (an XML file containing all information required for maintaining the EJB) or a set of deployment descriptors (if you are using some container-specific features).

5. A Primary Key class - is only Entity bean specific.

### **53. What is EJB role in J2EE?**

**Ans.** EJB technology is the core of J2EE. It enables developers to write reusable and portable server-side business logic for the J2EE platform

### **54. What is the need of Remote and Home interface.**

**Ans.** The main reason is because there is a clear division of roles and responsibilities between the two interfaces. The home interface is your way to communicate with the container, that is who is responsible of creating, locating even removing one or more beans. The remote interface is your link to the bean, that will allow you to remotely access to all its methods and members. These are two distinct elements (the container and the beans) and you need two different interfaces for accessing to both of them.

### **55. What is an EJB Context?**

**Ans.** EJBContext is an interface that is implemented by the container, and it is also a part of the bean-container contract. Entity beans use a subclass of EJBContext called EntityContext. Session beans use a subclass called SessionContext. These EJBContext objects provide the bean class with information about its container, the client using the bean and the bean itself. They also provide other functions. See the API docs and the spec for more details.

### **56. What is EJB container?**

**Ans.** An EJB container is a run-time environment that manages one or more enterprise beans. The EJB container manages the life cycles of enterprise bean objects, coordinates distributed transactions, and implements object security. Generally, each EJB container is provided by an EJB server and contains a set of enterprise beans that run on the server.

### **57. What is EJB server?**

**Ans.** An EJB server is a high-level process or application that provides a run-time environment to support the execution of server applications that use enterprise beans. An EJB server provides a JNDI-accessible naming service, manages and coordinates the allocation of resources to client applications, provides access to system resources, and provides a transaction service. An EJB server could be provided by, for example, a database or application server.

## 18PMC424 J2EE TECHNOLOGIES

### K3 Questions

#### UNIT I

1. Explain the JSplitPane with an illustrative program.
2. Explain the component that is used for displaying data in a hierarchical format.
3. Discuss on the Jar file and the steps to create a simple bean with a suitable program.
4. Explain the JTabbedPane with an illustrative program.
5. Write a program to copy the contents of one TextArea to another.
6. Explain the component which allows mutually exclusive choice with an illustrative program.
7. Explain the component which allows multiple choices with an example program.
8. Explain the JTextbox with an example program
9. Explain the JComboBox with a suitable program.
10. Explain the JButton with a suitable program

#### UNIT II

11. Explain the component that is used for displaying data in a hierarchical format.
12. Explain the Component that is used to display data in a tabular format
13. Explain introspection with an illustrative program
14. Explain the advantages of a Java Bean.
15. Discuss on (i)BeanInfoInterface (ii)Persistence
16. Compare and contrast Customizers and Property Editors
17. Examine the Java Beans API
18. Examine the JInternalFrame with a suitable program
19. Describe the Applets, how do they differ from Applications. Elucidate it using a suitable program?
20. Explain the JTree with a suitable program

### **UNIT III**

21. Explain the Generic Servlets with a suitable program
22. Explain the HTTP Servlets with a suitable program
23. Explain Servlet chaining with an illustrative program.
24. Explain session tracking using cookies with an illustrative program.
25. List and elucidate on the practical applications of servlets
26. Discuss on the uses of Servlets
27. Explain the advantages of servlets
28. Explain the Two tier and three tier Database access models
29. Explain cookies with a suitable program
30. Explain session tracking API with a suitable program
31. Explain session tracking using session objects with an illustrative program.

### **UNIT IV**

32. Explain the alternatives to JSP for generating dynamic content on the web
33. Explain the architecture of JSP.
34. Explain the directives in JSP with examples.
35. Explain Scriptlets with an illustrative program
36. Explain the Expressions with an example program
37. Explain the lifecycle of JSP
38. Explain declarations with an example program
39. Explain the alternatives to RMI
40. Explain the RMI registry (Boot strap registry) and list the methods of the registry
41. Explain the different layers of RMI.
42. List and explain the role of stubs in RMI

### **UNIT V**

43. Explain the Evolution of Enterprise computing.
44. Explain the transaction processor and the acid properties of the transactions
45. Discuss on the characteristics of OLTP, OLAP, DSS and EIS Systems
46. Discuss on the Single tier architecture with its Pros and Cons
47. Discuss on the technologies to implement the three tier architecture
48. Write short notes on Distributed transactions
49. Describe the EJB's role?
50. Explain the high level view of an EJB Conversation
51. Explain the roles in EJB

## **18PMC424 J2EE TECHNOLOGIES**

### **K4 Questions**

#### **UNIT I**

1. Elaborate on the steps to create a Menu with a suitable program.
2. Discuss on the JList and the JComboBox with an illustrative program.
3. Create and elaborate on the JSplitPane with an illustrative program.
4. Describe the JProgressbar with an illustrative program
5. Examine the DefaultListModel and the different selection modes available with a JList, using an illustrative program.
6. Discuss on the JScrollPane and the JTextField with example programs.
7. Create a program to retrieve the rows in a MS-Acess table using JTable as front end.
8. Describe the setDefaultCloseOperation method by creating a JFrame Program
9. Discuss on MDI Frame with a suitable program .
10. Analyse the Bound property and the Vetoable property with a suitable program.
11. Analyse the Simple property, Boolean property and the indexed property of a bean with a suitable program.
12. Discuss on the Jar file and the steps to create a simple bean with a suitable program.

#### **UNIT II**

13. Explain the Architecture and the life cycle of servlets with an illustrative program.
14. Explain the JDBC driver types and JDBC servlets with an illustrative program.
15. Describe the steps to connect to a database from the Servlets using a suitable program
16. Discuss on the Java Servlet alternatives
17. Elaborate Session tracking solutions with suitable program

#### **UNIT III**

18. Explain the JSP Directives and Scriptlets with an illustrative program.
19. Describe the scriptlets and expressions by creating appropriate programs
20. Examine the implicit objects available in JSP with an illustrative program
21. Discuss on JSP and Bean interactions

22. Examine the RMI communication using an illustrative Program.

#### **UNIT IV**

23. Discuss on the single, two and three tier architectures

24. Discuss on the services provided by the EJB container to the Bean

25. Elaborate on the session beans

26. Elaborate on the entity beans

27. Describe the architecture of EJB.

28. Discuss the steps to build and deploy EJB's using a suitable program.