

NGM COLLEGE
PG DEPARTMENT OF COMPUTER SCIENCE

17PCS311-J2EE Technologies

UNIT-I

1. What exception is thrown when Servlet initialization fails ?

- (a) IOException
- (b) ServletException
- (c) RemoteException

ANS: (b)

2. How can a Servlet call a JSP error page ?

- (a) This capability is not supported.
- (b) When the servlet throws the exception, it will automatically be caught by the calling JSP page.
- (c) The servlet needs to forward the request to the specific error page URL. The exception is passed along as an attribute named "javax.servlet.jsp.jspException".
- (d) The servlet needs to redirect the response to the specific error page, saving the exception off in a cookie.

ANS: (c)

3. What is the key difference between using a and HttpServletResponse.sendRedirect()?

- (a) forward executes on the client while sendRedirect() executes on the server.
- (b) forward executes on the server while sendRedirect() executes on the client.
- (c) The two methods perform identically.

ANS: (b)

4. Why beans are used in J2EE architecture in stead of writing all the code in JSPs ?

- (a) Allows separation of roles between web developers and application developers
- (b) Allows integration with Content Management tools

ANS: (a)

5. Purpose of tag

(a) used to incorporate Java applets into a Web page.

(b) Downloads a plugin to the client Web browser to execute an applet or Bean.

(c) Both (a) & (b)

ANS: (c)

6. The time between Command Execution and Response is called _____

(a) Granularity

(b) Latency

(c) Lag time

ANS: (c)

7. At what stage, the life cycle of a CMP bean can be assumed to be started ?

(a) before ejbCreate() method is executed

(b) after ejbCreate() method is executed

(c) in postCreate() method

(d) after executing ejbStore()

ANS: (c)

8 . In JSP, how can you know what HTTP method (GET or POST) is used by client request ?

(a) by using request.getMethod()

(b) by using request.setMethod()

(c) impossible to know

ANS: (a)

9. What is legal about JSP scriptlets

(a) A loop can begin in one Scriptlet and end in another

(b) Statements in Scriptlets should follow Java Syntax

(c) Semicolon is needed at the end of each statement in a Scriptlet

(d) All the above

ANS: (d)

10. Which method is called first each time a Servlet is invoked ?

(a) Start()

(b) Run()

(c) Servive()

(d) init()

ANS: (d)

Answer: d

UNIT-II

11. Which of the following statements is true about Java ME?

A. Java ME is a single specification.

B. Java ME is a family of related specifications.

C. Java ME is a platform for creating applications for the well-established desktop market.

D. Java ME is a platform for creating server-side enterprise applications.

Ans: B

12. What is a configuration?

A. A configuration defines a set of class libraries available for a particular domain of devices.

B. A configuration defines a vertical (or specialized) set of classes.

C. A configuration defines a minimum set of class libraries for a wide range of devices.

D. All of the above.

Ans: C

13. What is a profile?

- A. A profile defines a set of class libraries available for a wide range of devices.
- B. A profile defines a horizontal set of classes that a configuration can use.
- C. A profile defines the set of APIs available for a particular family of devices.
- D. A profile is the foundation for a configuration.

Ans: C

14. The Personal Digital Assistant (PDA) Profile is based on:

- A. Connected Device Configuration (CDC).
- B. Connected Limited Device Configuration (CLDC).

Ans: B

15. The Foundation profile:

- A. Extends the CDC by adding the missing user interface APIs.
- B. Extends the CLDC by adding the missing Java 2, Standard Edition (J2SE) core libraries.
- C. Is meant to serve as a foundation for other profiles.
- D. All of the above.

Ans: C

16. The RMI profile is meant to be used with:

- A. CLDC and MIDP
- B. CDC and Foundation
- C. Both A and B

Ans: B

17. The CLDC does not address user interface issues. They are left to be handled by the:

- A. Foundation profile
- B. Personal profile
- C. Mobile Information Device Profile (MIDP)
- D. None of the above

Ans: C

18. Which of the following network connections is supported by MIDP?

A. UDP datagrams

B. WAP

C. HTTP

D. All of the above

Ans: C

19. A Java ME-enabled device:

A. Can support only a single profile

B. Can support multiple profiles

Ans: B

20. A device that currently uses CLDC (and therefore has a profile) can use that profile with CDC without modification.

A. True

B. False

Ans: A

UNIT-III

1) What technique is used for the authentication mechanism in the servlet specification?

a. Role Based Authentication

b. Form Based Authentication

c. Both A & B

d. None of the above

ANSWER: A

2) Which attribute specifies a JSP page that should process any exceptions thrown but not caught in the current page?

- a. The `ErrorMessage` Attribute
- b. The `IsErrorMessage` Attribute
- c. Both A & B
- d. None of the above

ANSWER: a

3) Which Error Handling in Java handles runtime errors with exceptions, If an exception is not caught in your JSP or Servlet, Resin will use a special error page to send results back to the browser, Resin uses a default error page unless you explicitly provide an error page yourself?

- a. Client Request Time Processing Errors
- b. Compilation Time Processing Errors
- c. JSP Translation Time Processing Errors
- d. None of the above

ANSWER: a

4) The ASP and JSP technologies are quite similar in the way they support the creation of Dynamic pages, using HTML templates, scripting code and components for business logic.

- a. True
- b. False

ANSWER: a

5) Which can generate HTML dynamically on the client but can hardly interact with the web server to perform complex tasks like database access and image processing etc. in JSP?

- a. vs.Static HTML
- b. vs.Server-Side Includes
- c. vs.Pure Servlets
- d. Vs.JavaScript

ANSWER: d

6) In JSP Action tags which tags are used for bean development?

- a. jsp:useBean
- b. jsp:setProperty
- c. jsp:getProperty
- d. All mentioned above

ANSWER: d

7) Which two interfaces does the javax.servlet.jsp package have?

- a. JspPage
- b. HttpJspPage
- c. Both A & B
- d. PageContext

ANSWER: c

8) Which of the following is an advantage of the statement – Separation of business logic from JSP ?

- a. Custom Tags in JSP
- b. JSP Standard Tag Library
- c. All the above
- d. None of the above

ANSWER: a

9) JSPs eventually are compiled into Java servlets, you can do as much with JSPs as you can do with Java servlets.

- a. True
- b. False

ANSWER: a

10) How many jsp implicit objects are there and these objects are created by the web container that are available to all the jsp pages?

- a. 8
- b. 9
- c. 10
- d. 7

ANSWER: b

UNIT-IV

1) JavaServer Pages often serve the same purpose as programs implemented using the Common Gateway Interface (CGI)

- a. True**
- b. False**

ANSWER: a

2) Which action tags are used in JSP for developing web application with Java Bean?

- a. jsp:useBean**
- b. jsp:setProperty**
- c. jsp:getProperty**
- d. Both B & C**

ANSWER: d

3) Which technology do we mix our business logic with the presentation logic?

-

- a. Servlet**
 - b. JSP**
 - c. Both A & B**
 - d. None of the above**
-

4) Which is the Microsoft solution for providing dynamic Web content?

-

- a. ASP**
- b. JSP**

- c. Both A & B
 - d. None of the above
-

5) A bean encapsulates many objects into one object, so we can access this object from multiple places.

- a. True
 - b. False
-

6) Which tag is used to execute java source code in JSP?

- a. Declaration Tag
 - b. **Scriptlet tag**
 - c. Expression tag
 - d. None of the above
-

7) Which JSP Action tags is used to include the content of another resource, it may be jsp, html or servlet?

- a. **jsp:include**
 - b. jsp:forward
 - c. jsp:plugin
 - d. jsp:papam
-

8) In JSP how many ways are there to perform exception handling?

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

9) In JSP page directive which attribute defines the MIME(Multipurpose Internet Mail Extension) type of the HTTP response?

- a. import
 - b. Content Type**
 - c. Extends
 - d. Info
-

10) A JSP page consists of which tags?

- a. HTML tags
 - b. JSP tags
 - c. Both A & B**
 - d. None of the above
-

UNIT-V

1) Connection Pooling Class manages no of user requests for connections to improve the performance.

- a. True**
 - b. False
-

2) Which object of HttpSession can be used to view and manipulate information about a session?

- a. session identifier**
-

- b. creation time
 - c. last accessed time
 - d. All mentioned above
-

3) Using mail API we cannot send mail from a servlet.

- a. True
 - b. False
-

4) Which class provides stream to read binary data such as image etc. from the request object?

-

- a. ServletInputStream
 - b. ServletOutputStream
 - c. Both A & B
 - d. None of the above
-

5) The sendRedirect() method of HttpServletResponse interface can be used to redirect response to another resource, it may be servlet, jsp or html file.

- a. True
 - b. False
-

6) Which of these ways used to communicate from an applet to servlet?

- a. RMI Communication
- b. HTTP Communication

- c. Socket Communication
 - d. All mentioned above**
-

7) Which methods are used to bind the objects on HttpSession instance and get the objects?

- a. setAttribute
 - b. getAttribute
 - c. Both A & B**
 - d. None of the above
-

8) Which type of ServletEngine is a server that includes built-in support for servlets?

- a. Add-on ServletEngine
 - b. Embedded ServletEngine
 - c. Standalone ServletEngine**
 - d. None of the above
-

9) What type of servlets use these methods doGet(), doPost(),doHead, doDelete(), doTrace()?

- a. Generic Servlets
 - b. HttpServlets**
 - c. All of the above
 - d. None of the above
-

10) Which cookie it is valid for single session only and it is removed each time when the user closes the browser?

- a. Persistent cookie
- b. Non-persistent cookie**
- c. All the above
- d. None of the above

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UNIT I

1) What is J2EE?

J2EE means Java 2 Enterprise Edition. The functionality of J2EE is developing multitier web-based applications. The J2EE platform consists of a set of services, application programming interfaces (APIs), and protocols.

2) What are the four components of J2EE application?

- Application clients components.
- Servlet and JSP technology are web components.
- Business components (JavaBeans).
- Resource adapter components

3) What are types of J2EE clients?

- Applets
- Application clients
- Java Web Start-enabled clients, by Java Web Start technology.
- Wireless clients, based on MIDP technology.

4) What is considered as a web component?

Java Servlet and Java Server Pages technology components are web components. Servlets are Java programming language that dynamically receives requests and makes responses. JSP pages execute as servlets but allow a more natural approach to creating static content.

5) What is JSF?

JavaServer Faces (JSF) is a user interface (UI) designing framework for Java web applications. JSF provides a set of reusable UI components, a standard for web applications. JSF is based on MVC design pattern. It automatically saves the form data to the server and populates the form data when display on the client side.

6) Define Hash table

HashTable is just like Hash Map, Collection having a key(Unique), value pairs. Hashtable is a collection Synchronized object. It does not allow duplicate values or null values.

7) What is Hibernate?

Hibernate is an open source object-relational mapping and query service. In hibernate we can write HQL instead of SQL which save developers to spend more time on writing the native SQL. Hibernate has a more powerful association, inheritance, polymorphism, composition, and collections. It is a beautiful approach for persisting into the database using the Java objects. Hibernate also allows you to express queries using Java-based criteria.

8) What is the limitation of hibernate?

- Slower in executing the queries than queries are used directly.
- Only query language support for composite keys.
- No shared references to value types.

9) What are the advantages of hibernate?

- Hibernate is portable i mean database independent, Vendor independence.
- Standard ORM also supports JPA
- Mapping of the Domain object to the relational database.
- Hibernate is better than plain JDBC.
- JPA provider in JPA based applications.

10) What is ORM?

ORM stands for Object-Relational mapping. The objects in a Java class which is mapped into the tables of a relational database using the metadata that describes the mapping between the objects and the database. It works by transforming the data from one representation to another.

UNIT-II

11) Difference between save and saveorupdate

save() – This method in Hibernate is used to stores an object in the database. It inserts an entry if the record doesn't exist, otherwise not.

saveOrUpdate () -This method in the hibernate is used for updating the object using identifier. If the identifier is missing this method calls save(). If the identifier exists, it will call update method.

12) Difference between load and get method?

load() can't find the object from cache or database, an exception is thrown, and the load() method never returns null.

get() method returns null if the object can't be found. The load() method may return a proxy instead of a real persistent instance get() never returns a proxy.

13) How to invoke a stored procedure in hibernate?

```
{ ? = call thisISTheProcedure() }
```

14) What are the benefits of ORM?

- Productivity
- Maintainability
- Performance
- Vendor independence

15) What are the Core interfaces of Hibernate framework?

- Session Interface
- SessionFactory Interface
- Configuration Interface
- Transaction Interface
- Query and Criteria Interface

16) What is the file extension used for hibernate mapping file?

The name of the file should be like this: filename.hbm.xml

17) What is the file name of hibernate configuration file?

The name of the file should be like this: hibernate.cfg.xml

18) Describe the file types *.ear, *.jar and *.war?

- ***.jar files** – Property file contains libraries, resources and accessories are included with the *.jar file extension.
- ***.war files** – The files that need to development of web application (HTML, java scripts, JSP) included with a *.war file extension.
- ***.ear files** – The files for Enterprise Java Beans modules for the application is save as *.ear files.

19) How to add Hibernate mapping file in hibernate configuration file?

By <mapping resource=" filename.hbm.xml"/>

20) Define connection pooling?

Connection pooling is a mechanism reuse the connection which contains the number of already created object connection. So whenever it is necessary for an object, this mechanism is used to get objects without creating it.

UNIT-III

21) What is the Hibernate proxy?

An object proxy is just a way to avoid retrieving an object until you need it. Hibernate 2 does not proxy objects by default.

22). Describe Secure Socket Layer (SSL)?

The technology that use to communicate between the web server and the web browser is called **Secure Socket Layer (SSL)**. More especially SSL is a protocol that describes how algorithms to be used in encryption. The technology established an encrypted link between two parties and this link is allowed to secure transmission of sensitive information such as login credentials, credit/debit card information and social security numbers.

23) What is HQL?

HQL stands for Hibernate Query Language. Hibernate allows to the user to express queries in its portable SQL extension, and this is called as HQL. It also allows the user to express in native SQL.

24) What are the Collection types in Hibernate?

Set, List, Array, Map, Bag are collection type in Hibernate.

25) What is a thin client?

A thin client is a program interface to the application that does not have any operations like the query of databases, execute complex business rules, or connect to legacy applications.

26) Differentiate between .ear, .jar and .war files.

.jar files: These files are with the .jar extension. The .jar files contain the libraries, resources and accessories files like property files.

.war files: These files are with the .war extension. The .war file contains JSP, HTML, javascript and other files necessary for the development of web applications.

.ear files: The .ear file contains the EJB modules of the application.

27) What is the JSP tag?

In JSP tags can be divided into four different types.

- Directives
- Declarations
- Scriptlets
- Expressions

28) How to access web.xml init parameters from JSP page?

For example, if you have:

```
<context-param> <param-name>Id</param-name> <param-value>this is the value</param-value></context-param>
```

You can access this parameter

```
Id: <h:outputText value="#{initParam['Id']}" />
```

29) What are JSP Directives?

- 1. page Directives <%@page language="java" %>
- 2. include Directives: <%@ include file="/header.jsp" %>
- 3. taglib Directives <%@ taglib uri="tlds/taglib.tld" prefix="html" %>

30) What is the EAR file?

An EAR file is a JAR file with an .ear extension. A J2EE application with all of its modules is delivered in an EAR file.

UNIT-III

31) What is EJB?

EJB stands for Enterprise Java Beans. It is the server side components that executes in EJB container and encapsulates the business logic for the enterprise application.

32) What are Struts?

Struts framework is a Model-View-Controller(MVC) architecture for designing large-scale applications. It is a combination of Java Servlets, JSP, Custom tags, and message. Struts help you to create an extensible development environment for your application, based on published standards and proven design patterns. Model in many applications represents the internal state of the system as a set of one or more JavaBeans. The *View* is most often constructed using JavaServer Pages (JSP) technology. The Controller is focused on receiving requests from the client and producing the next phase of the user interface to an appropriate View component. The primary component of the Controller in the framework is a servlet of class `ActionServlet`. This servlet is configured by defining a set of `ActionMappings`.

33) What is ActionErrors?

`ActionErrors` object that encapsulates any validation errors that have been found. If no errors are found, return null or an `ActionErrors` object with no recorded error messages. The default implementation attempts to forward to the HTTP version of this method. Holding request parameters mapping and request and returns set of validation errors, if validation failed; an empty set or null

34) What is ActionForm?

`ActionForm` is a Java bean that associates one or more `ActionMappings`. A java bean become `FormBean` when extend `org.apache.struts.action.ActionForm` class. `ActionForm` object is automatically populated on the server side which data has been entered by the client from UI. `ActionForm` maintains the session state for a web application.

35) What is action mapping??

In action mapping, we specify action class for particular URL ie path and different target view ie forwards on to which request response will be forwarded. The **ActionMapping** represents the

information that the **ActionServlet** knows about the mapping of a particular request to an instance of a particular **Action** class. The *mapping* is passed to the *execute()* method of the **Action** class, enabling access to this information directly.

36) What is the MVC on struts?

MVC stands Model-View-Controller.

Model: Model in many applications represent the internal state of the system as a set of one or more JavaBeans.

View: The View is most often constructed using JavaServer Pages (JSP) technology.

Controller: The Controller is focused on receiving requests from the client and producing the next phase of the user interface to an appropriate View component. The primary component of the Controller in the framework is a servlet of class `ActionServlet`. This servlet is configured by defining a set of `ActionMappings`.

37) What are different modules in spring?

There are seven core modules in spring

- The Core container module
- O/R mapping module (Object/Relational)
- DAO module
- Application context module
- Aspect Oriented Programming
- Web module
- MVC module

38) What are the system services of EJB container?

EJB Container provides following system services.

- Persistence
- Security
- Transaction
- Connection pooling

- Component lifecycle management
- Threading

39) What is Spring?

Spring is a lightweight open source framework for the development of enterprise application that resolves the complexity of enterprise application development is also providing a cohesive framework for J2EE application development which is primarily based on IOC (inversion of control) or DI (dependency injection) design pattern.

40) What is the functionality of ActionServlet and RequestProcessor?

- Receiving the HttpServletRequest
- Populating JavaBean from the request parameters
- Displaying response on the web page Issues
- Content type issues handling
- Provide extension points

UNIT-V

41) ActionServlet, RequestProcessor, and Action classes are the components of Controller

42) What is default scope in Spring?

Singleton.

43) What are advantages of Spring usage?

- Pojo based programming enables reuse component.
- Improve productivity and subsequently reduce development cost.
- Dependency Injection can be used to improve testability.
- Spring required enterprise services without a need for the expensive application server.
- It reduces coupling in code and improves maintainability.

44)What are the Benefits Spring Framework?

- Lightweight container
- Spring can effectively organize your middle tier objects
- Initialization of properties is easy. No need to read from a properties file
- application code is much easier to unit test
- Objects are created Lazily, Singleton – configuration
- Spring’s configuration management services can be used in any architectural layer, in whatever runtime environment

45) What are the design principles for EJB?

- Behavior of the **EJB** application is specified by interfaces
- EJB applications are loosely coupled and tired.
- Implementation is hidden from the client side.
- The **EJB** container supports the application developer.
- The API to the application is in session tier.
- The API to the data sources is in entity tier.

46) How to Create Object without using the keyword “new” in java?

Without new, the Factory methods are used to create objects for a class. For example
Calender c=Calender.getInstance();

Here Calender is a class, and the method getInstance() is a Factory method which can create an object for Calendar class.

47) What is a servlet?

Servlets is a server-side component that provides a powerful mechanism for developing server side programs. Servlets is a server, as well as platform-independent and Servlets, are designed for various protocols. Most commonly used HTTP protocols. Servlets use the classes in the java packages javax.servlet, javax.servlet.http.HttpServletRequest, javax.servlet.http.HttpServletResponse, javax.servlet.http.HttpSession;. All servlets must implement the Servlet interface, which defines life-cycle methods.

48) Servlet is pure java object or not?

Yes, pure java object.

49) What are the phases of the servlet life cycle?

The life cycle of a servlet consists of the following phases:

- Servlet class loading
- Servlet instantiation
- the init method
- Request handling (call the service method)
- Removal from service (call the destroy method)

50) What must be implemented by all Servlets?

The Servlet Interface must be implemented by all servlets

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K3 level questions

UNIT-I

1. Explain JPanel with example.
2. Explain JFrame with example.
3. Explain JApplet with example
4. Explain JSplitPane with example
5. Explain JTabbedPane with example
6. Explain JViewport with example
7. Describe the fundamental steps in creating JMenu
8. Explain the JTextField and JTextArea
9. Explain JButton Class.
10. Explain JCheckBoxes and JRadioButton size .

UNIT-II

11. Explain JTree
12. Explain JTables
13. Explain the JInternalFrame
14. Explain the JDesktop Manager
15. Explain JProgressbar.
16. Write a program for JTree
17. Write a program for JTables
18. Write a program for JInternalFrame
19. Write a program for JDesktop Manager
20. Write a program for JProgressbar.

UNIT-III

21. Describe Java Bean
22. Explain the Advantages of a Java Bean.
23. Explain the concept of Application Builder tools
24. Discuss the Bean Developer Kit(BDK)-
25. Explain Jar files.
26. Write short notes on Introspection
27. Write short notes on developing a Simple Bean.
28. Explain Bean Info Interface
29. Explain Persistence

30. Explain the Java Bean API

UNIT-IV

31. Explain the Movement to Server Side Java
32. Write the applications for Java Servlets
33. Write short notes on Java Servlet Alternatives
34. Write short notes on reasons to use Java Servlets
35. Write short notes on Java Server Architecture
36. Write short notes on Servlet Basics
37. Explain the Lifecycle of Servlet
38. Explain uses of Servlet Chains
39. Define Two Tier and Three Tier Database access models
40. Discuss Session Objects.

UNIT-V

41. Explain Server-side programming
42. Explain about Life Cycle of JSP in detail.
43. Explain Architecture of JSP.
44. Explain the Scripting tag Elements.
45. Explain the Implicit Object.
46. Explain the Implicit Variables and Expressions
47. Explain the RMI Architecture
48. Explain Bootstrapping and RMI Registry
49. Discuss the RMI Compiler.
50. Explain the Object Specialization and Parameter Passing.

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K4 , K5 level questions

UNIT-I

1. Explain JPanel and JFrame with example.
2. Explain JApplet and JSplitPane with example
3. Explain JTabbedPane and JViewport with example
4. Describe the fundamental steps in creating JMenu
5. Explain the JTextField and JTextArea

UNIT-II

6. Explain JTree and JTables
7. Explain the JInternalFrame and JDesktop Manager
8. Explain JProgressbar and JTree.
9. Write a program for JTables and JInternalFrame
10. Write a program for JDesktop Manager and JProgressbar

UNIT-III

11. Describe Java Bean and advantages of a Java Bean.
12. Explain the concept of Application Builder tools
13. Discuss the Bean Developer Kit(BDK)
14. Explain Introspection and Persistence
15. Explain the Java Bean API

UNIT-IV

16. Write the applications for Java Servlets
17. Write detail notes on Java Server Architecture
18. Write detail notes on Servlet Basics and Lifecycle of Servlet
19. Explain the Explain uses of Servlet Chains
20. Define Two Tier and Three Tier Database access models

UNIT-V

21. Explain about Life Cycle of JSP in detail.
22. Explain in detail Architecture of JSP.
23. Explain the Implicit Object, Variables and Expressions.
24. Explain the RMI Architecture and RMI Compiler.
25. Explain Bootstrapping and RMI Registry in detail