BASIC INTERVIEW QUESTIONS:

- 1) What is difference between JDK, JRE and JVM?
- 2) How many types of memory areas are allocated by JVM?
- 3) What is JIT compiler?
- 4) What is platform?
- 5) What is the main difference between Java platform and other platforms?
- 6) What gives Java its 'write once and run anywhere' nature?
- 7) What is classloader?
- 8) Is Empty .java file name a valid source file name?
- 9) Is delete, next, main, exit or null keyword in java?
- 10) If I don't provide any arguments on the command line, then the String array of Main method will be empty or null?
- 11) What if I write static public void instead of public static void?
- 12) What is the default value of the local variables?
- 13) What is difference between object oriented programming language and object based programming language?
- 14) What will be the initial value of an object reference which is defined as an instance variable?
- 15) What is constructor?
- 16) What is the purpose of default constructor?
- 17) Does constructor return any value?
- 18) Is constructor inherited?

19) Can you make a constructor final? 20) What is static variable? 21) What is static method? 22) Why main method is static? 23) What is static block? 24) Can we execute a program without main() method? 25) What if the static modifier is removed from the signature of the main method? 26) What is difference between static (class) method and instance method? 27) What is 'this' in java? 37) What is method overloading? 38) Why method overloading is not possible by changing the return type in java? 39) Can we overload main() method? 40) What is method overriding? 41) Can we override static method? 43) Difference between method Overloading and Overriding. 44) Can you have virtual functions in Java? 45) What is covariant return type? 46) What is final variable? 47) What is final method? 48) What is final class? 49) What is blank final variable? 50) Can we intialize blank final variable? 51) Can you declare the main method as final? 52) What is Runtime Polymorphism?

53) Can you achieve Runtime Polymorphism by data members? 54) What is the difference between static binding and dynamic binding? 55) What is abstraction? 56) What is the difference between abstraction and encapsulation? 57) What is abstract class? 58) Can there be any abstract method without abstract class? 59) Can you use abstract and final both with a method? 60) Is it possible to instantiate the abstract class? 61) What is interface? 62) Can you declare an interface method static? 63) Can an Interface be final? 64) What is marker interface? 65) What is difference between abstract class and interface? 66) Can we define private and protected modifiers for variables in interfaces? 67) When can an object reference be cast to an interface reference? 68) What is package? 69) Do I need to import java.lang package any time? Why? 70) Can I import same package/class twice? Will the JVM load the package twice at runtime? 71) What is static import? 72) What is nested class? 73) Is there any difference between nested classes and inner classes? 74) Can we access the non-final local variable, inside the local inner class? 75) What is nested interface? 76) Can a class have an interface?

- 77) Can an Interface have a class?78) What is serialization?
- 79) What is Deserialization?
- 80) What is transient keyword?
- 81) What is Externalizable?
- 82) What is the difference between Serializable and Externalizable interface?
- 83)How do I convert a numeric IP address like 192.18.97.39 into a hostname like java.sun.com?

By InetAddress.getByName("192.18.97.39").getHostName() where 192.18.97.39 is the IP address.

84) What is reflection?

Reflection is the process of examining or modifying the runtime behaviour of a class at runtime. It is used in:

IDE (Integreted Development Environment) e.g. Eclipse, MyEclipse, NetBeans.

Debugger

Test Tools etc.

- 85) Can you access the private method from outside the class?
- 86)How to call private method from another class in java?

You can call the private method from outside the class by changing the runtime behaviour of the class.

By the help of java.lang.Class class and java.lang.reflect.Method class, we can call private method from any other class.

87) What is the difference between little endian and big endian platforms? What are the specific steps to take in java programming to take of the issues related to conversations?

BASIC PROGRAMS:

- 1) write a program to find whether the number is prime or not?
- 2) write a program to swap two numbers without using third variable in java?
- 3) write a program to check whether a string is string is palindrome or not?
- 4) write a program to reverse a number in java?
- 5) write a program to check even or oddd without using modulous or division?
- 6) write a program to generate fibonacci series?
- 7) write a program to generate spiral matrix in java?
- 8) write a program to sort the integer array using bubble sort?
- 10)Design vending machine in Java which vends Item based upon amount and return coin if there is no Item?
- 11) Write a Java program to calculate Factorial of a number in Java?
- 12) Write a program to find GCD and LCM of two numbers?
- 13) Write a program to convert Decimal to binary without using standard functions?

ARRAYS AND STRINGS:

- 1) Can you change size of array once created?
- 2) Can you store String in an array of Integer in Java? compile time error or runtime exception? [answer]
- 3) What is difference between ArrayIndexOutfOBounds and ArrayStoreException?
- 4) Can you use Generics with array?
- 5) Is it legal to initialize an array int i[] = $\{1, 2, 3, 4, 5\}$

6) Difference between a[] and []a in Java? 7) What is two dimensional array? 8) Do you have three dimensional array in Java? 9) How to iterate over array in Java? 10) How to search an array to check if an element exists there? 11)How to sort an array in Java? 12) How to copy array in Java? 13) How to access elements of array in Java? 14) What is difference between an array and a linked list? 15)Can you make array volatile in Java? 16)Can you make array volatile in Java?Where does array stored in memory? 17) What is String in Java? Is String is data type? 18) Why is String final in Java? 19) How do you compare two String in Java? 20) Can we compare String using == operator? What is the risk? 21) How does substring method work in Java? 22) What is String pool in Java? 23) Is string thread-safe in Java? 24) What is the meaning of immutable in terms of String? 25) Why string objects are immutable in java? 26) How many ways we can create the string object?

27) How many objects will be created in the following code?

```
String s1="Welcome";
String s2="Welcome";
String s3="Welcome";
```

- 28) Why java uses the concept of string literal?
- 29) How many objects will be created in the following code?

```
String s = new String("Welcome");
```

- 30) What is the basic difference between string and stringbuffer object?
- 31) What is the difference between StringBuffer and StringBuilder?
- 32) How can we create immutable class in java?
- 33) What is the purpose of toString() method in java?
- 34) What is the output of following code?

```
String s1="Uttara";

String s2="Uttara";

String s3=new String("Uttara");

String s4=new String("Students");

System.out.println("First check "+(s1==s2));

System.out.println("Second check "+(s1==s3));

System.out.println("Third check "+(s1.equals(s2));

System.out.println("fourth check "+(s1.equals(s4));

System.out.println("fifth check "+(s1.equals(s3));

System.out.println("sixth check "+(s1==s4));
```

PROGRAMS BASED ON ARRAYS AND STRINGS:

- 0) How to find the missing number in integer array of 1 to 100?
- 1) How to find duplicate number on Integer array in Java?
- 2) How to check if array contains a number in Java?
- 3) How to find largest and smallest number in unsorted array?
- 4) How to find all pairs on integer array whose sum is equal to given number?
- 5) How to find repeated numbers in an array if it contains multiple duplicate?
- 6) Write a program to remove duplicates from array in Java?
- 7) Write a program to find intersection of two sorted array in Java?
- 8) There is an array with every element repeated twice except one. Find that element?
- 9) How to find kth smallest element in unsorted array?
- 10) How to find kth largest element in unsorted array?
- 11) How to find common elements in three sorted array?

Examples:

```
input1 = {1, 5, 10, 20, 40, 80}

input2 = {6, 7, 20, 80, 100}

input3 = {3, 4, 15, 20, 30, 70, 80, 120}

Output: 20, 80
```

12) How find the first repeating element in an array of integers?

Examples:

Input: input [] = {10, 5, 3, 4, 3, 5, 6}

Output: 5 [5 is the first element that repeats]

- 13) How to find first non-repeating element in array of integers?
- 14) How to find top two numbers from an integer array?
- 15)How to find the smallest positive integer value that cannot be represented as sum of any subset of a given array?

Examples:

```
Input: {1, 3, 6, 10, 11, 15};
```

Output: 2

- 16) How to rearrange array in alternating positive and negative number?
- 17) Write a program to find duplicate characters in a String?
- 18) Write a program to find the duplicate words and their count in a sentence?
- 19) Write a java program to count the number of words in a string?
- 20) Write a java program to remove all white spaces from a string?
- 21) Write a java program to check whether one string is a rotation of another?
- 22) Write a java program to check whether two strings are anagram or not?
- 23) Write a java program to reverse a given string with preserving the position of spaces?
- 24) Write a java program to reverse each word of a given sentence?
- 25) How do you convert string to integer and integer to string in java?
- 26) Write a java program to find the percentage of uppercase letters, lowercase letters, digits and special characters in a given string?
- 27) Write a java program to prove that strings are immutable in java?
- 28) How do you find longest substring without repeating characters in the given string?
- 29) How do you swap two string variables without using third or temp variable in java?
- 30) Write a java program to find all permutations of a string?
- 31) How do you find first repeated and non-repeated character in the given string in java?
- 32) Write a java program to append a given string to a text file?

- 33) How do you find the number of characters, words and lines in the given text file in java?
- 34) How do you find the most repeated word in a text file in java?
- 35) Write a Java program to reverse String in Java without using any API?
- 36) Write a Program to check if a String is a palindrome or not?
- 37) Write a method in Java to remove any character from String?
- 38) Write a method to split a comma separated String in Java without using builtin functions?
- 39) Write a method for contains without using builtin function?
- 40) Write a method for equals without using builtin function?
- 41) Write a method for replace without using builtin function?
- 42) Write Java program to print all permutations of a String e.g. passing "ABC" will print all permutations like "BCA", "CBA" etc
- 43) Write a program to remove, and count the number of vowels and consonants present in the sentence?
- 44) Write a program to sort the string without using String Api. i.e; if string is "machine" then output shall be "acehimn"?
- 45) Write a program to find the unique elements from two ararys and that unique arrays should be added in to another Array?

COLLECTIONS:

- 1) What is the difference between ArrayList and Vector?
- 2) What is the difference between ArrayList and LinkedList?
- 3) What is the difference between Iterator and ListIterator?
- 4) What is the difference between Iterator and Enumeration?
- 5) What is the difference between List and Set?
- 6) What is the difference between HashSet and TreeSet?

- 7) What is the difference between Set and Map?
- 8) What is the difference between HashSet and HashMap?
- 9) What is the difference between HashMap and TreeMap?
- 10) What is the difference between HashMap and Hashtable?
- 11) What is the difference between Collection and Collections?
- 12) What is the difference between Comparable and Comparator?
- 13) What is the advantage of Properties file?
- 14) What does the hashCode() method?
- 15) Why we override equals() method?
- 16) How to synchronize List, Set and Map elements?
- 17) What is the advantage of generic collection?
- 18) What is hash-collision in Hashtable and how it is handled in Java?
- 19) What is the Dictionary class?
- 20) What is the default size of load factor in hashing based collection?

PROGRAMS BASED ON COLLECTIONS:

- 1) Write a Comparator in Java to compare two employees based upon there name, departments and age?
- 2) Write a Java program to prevent deadlock in Java?
- 3) Write a Java program to sort the student details based on thier birthdate?
- 4) Write a program to implement the linked list in java?
- 5) Write a program to implement Stack and queues in java?
- 6) Write a program to sort the words in a sentence based on alphabetical order?

- 7) Write a program to sort the words in a sentence in decending order based on their count of repeated words?
- 8) Write a program to get the size of hashset Example?
- 9) write a program to remove specified element from Java HashSet example?
- 10) Write a program to Check if a particular element exists in Java HashSet Example?
- 11) Java program to Copy all elements of Java HashSet to an Object Array?
- 12) Write a program to Check if a particular element exists in Java LinkedHashSet Example?
- 13) Write a program to Remove specified element from Java LinkedHashSet example?
- 14) Write a program to Remove all elements LinkedHashSet example?
- 15) Java Program to convert Treeset to an interger array?
- 16) Write a program to Get Size of Java TreeSet Example?
- 17) Write a program to Get lowest and highest value stored in Java TreeSet example?
- 18) Write a program to Sort employee object in descending order using comparable and TreesSet?
- 19) Basic Java program to Remove specified element from TreeSet example?
- 20) How to Iterate ArrayList using Java ListIterator Example?
- 21) How to Sort ArrayList in descending order?
- 22) How to add an element in arraylist at specific index?
- 23) How to sort arraylist of strings alphabetically java?
- 24) Write a Java Program to Sort elements of Java ArrayList Example?
- 25) Basic Java example program to replace an element at specified index arraylist?
- 26) Write a program to Search an element of Java ArrayList Example?
- 27) Java Example Program to Remove element from specified index ArrayList?
- 28) Write a program to Remove duplicates from arraylist without using collections?
- 29) Basic Java Example program Check if a particular key exists HashMap?

- 30) Java Basic example program to check particular value exists in hashmap?
- 31) Java program to remove key value from hashmap?
- 32) How to Convert keys of a map to List?
- 33) How to Convert Values of a map to List?
- 34) How to iterate Map elements in java?
- 35) How to Check particular value exist in hashtable?
- 36) How to Iterate through keys of hashtable java?
- 37) How to Iterate through values of hashtable java?
- 38) How to Remove key value pair from hashtable java example?
- 39) How to Remove all elements from hashtable java example?
- 40) How to convert list elements to Map in java?

EXCEPTIONS:

- 1) What is Exception Handling?
- 2) What is difference between Checked Exception and Unchecked Exception?
- 3) What is the base class for Error and Exception?
- 4) Is it necessary that each try block must be followed by a catch block?
- 5) What is finally block?
- 6) Can finally block be used without catch?
- 7) Is there any case when finally will not be executed?
- 8) What is difference between throw and throws?
- 9) Can an exception be rethrown?
- 10) Can subclass overriding method declare an exception if parent class method doesn't throw an exception ?

- 11) What is exception propagation?
- 12) Exceptions are defined in which java package?
- 13) How are the exceptions handled in java?
- 14) Explain the exception hierarchy in java.
- 15) What is difference between ClassNotFoundException and NoClassDefFoundError?
- 16) How to create custom Exception?
- 17) When to make a custom checked Exception or custom unchecked Exception?
- 18) What is StackOverflowError?
- 19) Can we write only try block without catch and finally blocks?
- 20) Can we keep other statements in between try, catch and finally blocks?
- 21) What is unreachable catch block error?
- 22) What is OutOfMemoryError in java?
- 23) What is the difference between ClassNotFoundException and NoClassDefFoundError in java?
- 24) Can we keep the statements after finally block If the control is returning from the finally block itself?
- 25) Does finally block get executed If either try or catch blocks are returning the control?
- 26) Can we throw an exception manually? If yes, how?
- 27) Why it is always recommended that clean up operations like closing the DB resources to keep inside a finally block?
- 28) What is the difference between final, finally and finalize in java?
- 29) What is ClassCastException in java?
- 30) Can we override a super class method which is throwing an unchecked exception with checked exception in the sub class?
- 31) What are chained exceptions in java?
- 32) Which class is the super class for all types of errors and exceptions in java?

33) What is the use of printStackTrace() method?

THREADS:

1) What is multithreading?
2) What is thread?
3) What is the difference between preemptive scheduling and time slicing?
4) What does join() method?
5) What is difference between wait() and sleep() method?
6) Is it possible to start a thread twice?
7) Can we call the run() method instead of start()?
8) What about the daemon threads?
9)Can we make the user thread as daemon thread if thread is started?
10)What is shutdown hook?
11)When should we interrupt a thread?
12) What is synchronization?
13) What is the purpose of Synchronized block?
14)Can Java object be locked down for exclusive use by a given thread?
15) What is static synchronization?
16)What is the difference between notify() and notifyAll()?
17)What is deadlock?
18) What is Garbage Collection?
19) What is gc()?
20) What is the purpose of finalize() method?

- 21) Can an unrefrenced objects be refrenced again?
- 22) What kind of thread is the Garbage collector thread?
- 23) What is difference between final, finally and finalize?
- 24) What is the purpose of the Runtime class?
- 25) How will you invoke any external process in Java?
- 26) What is thread-safety? is Vector a thread-safe class?
- 27) What is race condition in Java? Given one example?
- 28) How to stop a thread in Java?
- 29) What happens when an Exception occurs in a thread?
- 30) How do you share data between two thread in Java?
- 31) What is the difference between Stack and Heap in Java?
- 32) What is thread pool? Why should you thread pool in Java?
- 33) Write code to solve Producer Consumer problem in Java?
- 34) How do you avoid deadlock in Java? Write Code?
- 35) How do you check if a Thread holds a lock or not?
- 36) There are three threads T1, T2, and T3? How do you ensure sequence T1, T2, T3 in Java?
- 37) What does yield method of Thread class do?
- 38) What is the difference between calling wait() and sleep() method in Java multi-threading?
- 39) What happens if a thread throws an Exception inside synchronized block?
- 40) How to create an Immutable object in Java?

I/O INTERVIEW QUESTIONS:

- 1) What is a IO stream?
- 2) What is the necessity of two types of streams byte streams and character streams?
- 3) What are the super most classes of all streams?
- 4) What are FileInputStream and FileOutputStream?
- 5) Which you feel better to use byte streams or character streams?
- 6) What are filter streams?
- 7) Name the filter streams available?
- 8) Name the filter stream classes on reading side of byte stream?
- 9) What is the functionality of SequenceInputStream?
- 10) What is PrintStream and PrintWriter?
- 11) Which streams are advised to use to have maximum performance in file copying?
- 12) What are piped streams?
- 13) What is File class?
- 14) What is RandomAccessFile?
- 15) How to use ObjectOutputStream/ObjectInputStream?
- 16) How does InputStream.read() method work? Can you give me some sample code?
- 17) Why only read() methods in ByteArrayInputStream does not throw IOException?
- 18) Tell something about BufferedWriter? What are flush() and close() used for?
- 19) What is Scanner class used for ? when was it introduced in Java?
- 20) What is a stream and what are the types of Streams and classes of the Streams?
- 21) What is the difference between the Reader/Writer class hierarchy and the InputStream/OutputStream class hierarchy?

22) Which is the abstract parent class of FileWriter? 23) Which class is used to read streams of raw bytes from a file? 24 Which is the Parent class of FileInputStream? 25) Which exceptions should be handled with the following code? FileOutputStream fileOutputStream = new FileOutputStream(new File("newFile.txt")); Ans. FileNotFoundException 26) Will this code compile fine? ObjectOutputStream objectOutputStream = new ObjectOutputStream(new FileOutputStream(new File("newFile.txt"))); Ans. Yes. 27) What is the package name for ObjectInputStream class? 28) Which is the Parent Class of StringBufferInputStream class? 29) Which is the Parent Class of SequenceInputStream class? 30) Which is the Parent Class of FilterInputStream class? 31) What is the package name for FilterInputStream class? 32) Which interfaces are implemented by FileInputStream? 33) Which is the Parent Class of InputStream class? 34) Which is the Parent Class of FileInputStream class? **PROGRAMS BASED ON I/O:**

1) Show list of all file names from a folder.

2) How to get list of all files from a folder?

- 3) Filter the files by file extensions and show the file names.
- 4) How to read file content using byte array?
- 5) How to read file content line by line in java?
- 6) How to read property file in static context?
- 7) How to read input from console in java?
- 8) How to get file list from a folder filtered by extensions?
- 9) How to get file URI reference?
- 10) How to store and read objects from a file?
- 11) How to create and store property file dynamically?
- 12) How to store property file as xml file?
- 13) How to get file last modified time?
- 14)How to convert byte array to inputstream?
- 15) How to convert inputstream to reader or BufferedReader?
- 16) How to convert byte array to reader or BufferedReader?
- 17)How to set file permissions in java?
- 18) How to read a file using BufferedInputStream?
- 19) How to create temporary file in java?
- 20) How to write or store data into temporary file in java?
- 21)How to delete temporary file in java?
- 22) How to write string content to a file in java?
- 23) How to write byte content to a file in java?

MISCELLANEOUS QUESTIONS:

1)What is a native method?
2)What are wrapper classes?
3)What is the purpose of the System class?
4)What is singleton class?
5)What are peerless components?
6)What is a lightweight component?
7)What is a heavyweight component?
8)What is an applet?
9)Can you write a Java class that could be used both as an applet as well as an application?
10)What is a JavaBean?
11)What is Locale?

J2EE INTERVIEW QUESTIONS:

SQL(STRUCTURED QUERY LANGUAGE):

- 1) What is SQL?
- 2) What is "TRIGGER" in SQL?
- 3) What are the usages of SQL?
- 4) Does SQL support programming?
- 5) What are the subsets of SQL?

6) What is data definition language? 7) What is data manipulation language? 8) What is data control language? 9) What are tables and fields in database? 10) What is a primary key? 11) What is a foreign key? 12) What is a unique key? 13) What are the type of operators available in SQL? 14) What is view in SQL? 15) What is an Index in SQL? 16) Which are the different types of indexes in SQL? 17) What is Unique Index? 18) What is Clustered Index in SQI? 19) What is NonClustered Index in SQL? 20) What is the difference between SQL, MySQL and SQL Server? 21) What is the difference between SQL and PL/SQL? 22) Is it possible to sort a column using a column alias? 23) What is the difference between clustered and non clustered index in SQL? 24) What is the SQL query to display current date? 25) Which are the most commonly used SQL joins? 26) What are the different types of joins in SQL? 27) What is Inner Join, Right Join, Full Join, Left Join in SQL? 28) What is self join and what is the requirement of self join? 29) What are set operators in SQL?

- 30) What is the difference between BETWEEN and IN condition operators?
- 31) What is a constraint? Tell me about its various levels.
- 32) Write an SQL query to find names of employee start with 'A'?
- 33) What is the difference between DELETE and TRUNCATE statement in SQL?
- 34) What is ACID property in database?
- 35) What is the usage of SQL functions?
- 36) What is the usage of DISTINCT keyword?

QUERIES:

- 1) SQL Query to find second highest salary of Employee
- 2) SQL Query to find Max Salary from each department.
- 3) Write SQL Query to display the current date.
- 4) Write an SQL Query to check whether date passed to Query is the date of given format or not.
- 5) Write an SQL Query to print the name of the distinct employee whose DOB is between 01/01/1960 to 31/12/1975.
- 6) Write an SQL Query find number of employees according to gender whose DOB is between 01/01/1960 to 31/12/1975.
- 7) Write an SQL Query to find an employee whose Salary is equal or greater than 10000.
- 8) Write an SQL Query to find name of employee whose name Start with 'M'
- 9) find all Employee records containing the word "Joe", regardless of whether it was stored as JOE, Joe, or joe.
- 10) Write an SQL Query to find the year from date.
- 12) There is a table which contains two column Student and Marks, you need to find all the students, whose marks are greater than average marks i.e. list of above average students.

13) How do you find all employees which are also manager?

NOTE:Please solve sql lab queries also.

JDBC(JAVA DATABASE CONNECTIVITY):

- 1) What is JDBC?
- 2) What is JDBC Driver?
- 3) What are the steps to connect to the database in java?
- 4) What are the JDBC API components?
- 5) What are the JDBC statements?
- 6) What is the difference between Statement and PreparedStatement interface?
- 7) How can we execute stored procedures and functions?
- 8) What is the role of JDBC DriverManager class?
- 9) What does the JDBC Connection interface?
- 10) What does the JDBC ResultSet interface?
- 11) What does the JDBC ResultSetMetaData interface?
- 12) What does the JDBC DatabaseMetaData interface?
- 13) Which interface is responsible for transaction management in JDBC?
- 14) What is batch processing and how to perform batch processing in JDBC?
- 15) How can we store and retrieve images from the database?
- 16) What is connection pooling?
- 17) Does the JDBC-ODBC Bridge support multiple concurrent open statements per connection?

18) What is the fastest type of JDBC driver?

JDBC PROGRAMS:

- 1) How to create jdbc connection?
- 2) What is statement and Resultset in jdbc?
- 3) How to execute and read select queries in jdbc?
- 4) How to update a record in the database using jdbc?
- 5) What are the types of jdbc statements available?
- 6) Write an example code for jdbc prepared statement with Resultset?
- 7) How to get a primary key value from inserted queries using jdbc?
- 8) Write a simple program for callable statement to execute stored pricedures?
- 9) Write a rogram to execute sql function using callable statement?

SERVLETS:

- 1) How many objects of a servlet is created?
- 2) What is the life-cycle of a servlet?
- 3) What are the life-cycle methods for a servlet?
- 4) Who is responsible to create the object of servlet?
- 5) When servlet object is created?
- 6) What is difference between Get and Post method?
- 7) What is difference between PrintWriter and ServletOutputStream?
- 8) What is difference between GenericServlet and HttpServlet?

9) What is servlet collaboration? 10) What is the purpose of RequestDispatcher Interface? 11) Can you call a jsp from the servlet? 12) Difference between forward() method and sendRedirect() method? 13) What is difference between ServletConfig and ServletContext? 14) What is Session Tracking? 15) What are Cookies? 16) What is difference between Cookies and HttpSession? 17) What is filter? 18) How can we perform any action at the time of deploying the project? 19) What is the disadvantage of cookies? 20) How can we upload the file to the server using servlet? 21) What is load-on-startup in servlet? 22) What if we pass negative value in load-on-startup? 23) What is war file? 24) How to create war file? 25) What are the annotations used in Servlet 3? 26) Which event is fired at the time of project deployment and undeployment? 27) Which event is fired at the time of session creation and destroy? 28) Which event is fired at the time of setting, getting or removing attribute from application scope? 29) What is the use of welcome-file-list? 30) What is the use of attribute in servlets?

PROGRAMS BASED ON SERVLETS:

- 1) Write a program to display HelloWorld using servlets?
- 2) Write a program to display current date and time using servlets?
- 3) Write a program to increment the count using servlets?
- 4) Write a program for registration and login usecases by taking name, emailed, password, repeatpassword using servlets?
- 5) Write a program to display the tables for a given number using servlets?

JSP(JAVA SERVER PAGES):

- 1) What is JSP?
- 2) What are the life-cycle methods for a jsp?
- 3) What is difference between hide comment and output comment?
- 4) What are the JSP implicit objects?
- 5) What is difference between include directive and include action?
- 6) Is JSP technology extensible?
- 7) How can I implement a thread-safe JSP page? What are the advantages and Disadvantages of using it?
- 8) How can I prevent the output of my JSP or Servlet pages from being cached by the browser?
 - (OR) How to disable caching on back button of the browser?
- 9) How can we handle the exceptions in JSP?
- 10) What are the two ways to include the result of another page. ?
- 11) How can we forward the request from jsp page to the servlet?

- 12) Can we use the exception implicit object in any jsp page?
- 13)How is JSP used in the MVC model?
- 14) What are context initialization parameters?
- 15) What are the different scope values for the < jsp:useBean> tag?
- 16) What is the difference between ServletContext and PageContext?-
- 17) What is the difference in using request.getRequestDispatcher() and context.getRequestDispatcher()?
- 18) What is EL in JSP?
- 19) What is basic differences between the JSP custom tags and java beans?
- 20)Can an interface be implemented in the jsp file?

PROGRAMS BASED ON JSPS:

- 1) Write a program to display HelloWorld using jsps?
- 2) Write a program to display current date and time using jsps?
- 3) Write a program to increment the count using jsps?
- 4) Write a program for registration and login usecases by taking name, emailed, password, repeatpassword using usins jsps?
- 5) Write a program to display the tables for a given number using jsps?
- 6) Write a program to find cube root and square root of a given number?

ALL THE BEST