

Model Viva Questions for “**Name of the Lab: Java programming lab**”

Common to: **CS/IT V SEM**

Title of the Practical: Programs to design Compound Interest.

Q1- What is The Java Features ?

A1-1.Compiled and Interpreted 2.Platform-Independent and Portable 3. Object – Oriented 4.Robust and Secure 5.Distributed 6.Simple, Small and Familiar 7.Multithreaded and interactive 8.High Performance 9.Dynamic and Extensible

Q2 -How Java Differs From C ?

A2-1.Java does not include the C unique statement keywords goto, size of, and type def.

2.Java does not contain the data type struct,union and enum.

3.Java does not define the type modifiers keywords auto,extern ,register,signed,and unsigned.

4.Java does not support an explicit pointer type.

Q3- How Java Differs From C ++ ?

A3-1.java does not support operator overloading.

2. Java does not have template classes as in C++.

3.Java does not multiple inheritance of classes.This is accomplished using a new feature called “interface”.

Q4- What is The Java Components?

A4-1.Object and Classes 2.Data Abstraction and Encapsulation 3.Inheritance 4.Polymorephism 5.Dynamic Binding 6.Message Communication.

Q5- What is the Java Development kit (JDK) ?

A5-1.**appletviewer**(for viewing Java applets) 2.**javac**(Java compiler) 3.**java**(Java interpreter) 4.**javap**(Java disassembler) 5.**javah**(for C header files) 6.**javadoc**(for creating HTML documents) 7.**jdb**(Java debugger)

Q6- What is the **Variables** ?

A6- A variable is an identifier that denotes a storage location used to store a data value.

Q7- What are Class?

A7- Class is a template for multiple objects with similar features and it is a blue print for objects. It defines a type of object according to the data the object can hold and the operations the object can perform.

Q8- What are Primitive data types?

A8- Primitive data types are 8 types and they are: byte, short, int, long, float, double, boolean, char.

Q9- What is the method overloading_?

A9- Function with same name but different argument perform different task known as method overloading.

Q10- What are inner class and anonymous class?

A10- Inner class : classes defined in other classes, including those defined in methods are called inner classes. An inner class can have any accessibility including private. Anonymous class : Anonymous class is a class defined inside a method without a name and is instantiated and declared in the same place and cannot have explicit constructors.

Title of the Practical: Program to design comparison two Variable use if statements.

Q1-What is the if statement ?

A1- The if statement is a powerful decision making statement and is used to control the flow of execution of statements.

Q2- What is the If-else statement ?

A2- The if.....else statement is an extension of the simple if statement.

Q3- What is the Switch-case statement ?

A3- The switch statement tests the value of a given variable(or expression) against a list of case values and when a match is found , a block of statements associated with that case is executed.

Q4- What are the Break ?

A4- The break statement is used to terminate a statement sequence.

Q5-What are Continue ?

A5- The continue statement causes control to be transferred directly to the conditional expression that controls the loop.

Q6-What is the While loop ?

A6- The while loop is Java's most fundamental looping statement.It repeats a statement or block while its controlling expression is true.

Q7-What is the Do – while loop ?

A7- The do –while is an exit – controlled loop.Based on a condition, the control is transferred back to a particular point in the program.

Q8-What is the for loop ?

A8- The for is an entry-controlled loop and is used when an action is to be repeated for a predetermined number of itmes.

Q9-What is the Operators ?

A9- Operators are used in programs to manipulate data and variables.

Q10-What is the Arithmetic Expressions ?

A10- An arithmetic expression is a combination of variables , constants , and operators arranged as per the syntax of the language.

Title of the Practical: Program to design Constructor.

Q1- What is the Constructor ?

A2- Constructor is a special member function of class call automatically when object is created.

Q2- What is the Parameterized constructors_?

A2- The constructors that can take argument are called parameterized constructors.

Q3- What is OOPs?

A3- Object oriented programming organizes a program around its data, i. e. , objects and a set of well defined interfaces to that data. An object-oriented program can be characterized as data controlling access to code.

Q4- What are Encapsulation?

A4- Encapsulation is the mechanism that binds together code and data it manipulates and keeps both safe from outside interference and misuse.

Q5- What are Polymorphism?

A5- Polymorphism is the feature that allows one interface to be used for general class actions.

Q6- What is the difference between procedural and object-oriented programs?

A6- a) In procedural program, programming logic follows certain procedures and the instructions are executed one after another. In OOP program, unit of program is object, which is nothing but combination of data and code. b) In procedural program, data is exposed to the whole program whereas in OOPs program, it is accessible within the object and which in turn assures the security of the code.

Q7- What is an Object and how do you allocate memory to it?

A7- Object is an instance of a class and it is a software unit that combines a structured set of data with a set of operations for inspecting and manipulating that data. When an object is created using new operator, memory is allocated to it.

Q8- What is the difference between constructor and method?

A8- Constructor will be automatically invoked when an object is created whereas method has to be called explicitly.

Q9- What are methods and how are they defined?

A9- Methods are functions that operate on instances of classes in which they are defined.

Q10- What is the use of bin and lib in JDK?

A10- Bin contains all tools such as javac, appletviewer, awt tool, etc., whereas lib contains API and all packages.

Title of the Practical: Program to design toUpperCase() and toLowerCase Type Conversion.

Q1- What is casting?

A1- Casting is used to convert the value of one type to another.

Q2- How many ways can an argument be passed to a subroutine and explain them?

A2- An argument can be passed in two ways. They are passing by value and passing by reference. Passing by value: This method copies the value of an argument into the formal parameter of the subroutine. Passing by reference: In this method, a reference to an argument (not the value of the argument) is passed to the parameter.

Q3- What is the difference between an argument and a parameter?

A3- While defining method, variables passed in the method are called parameters. While using those methods, values passed to those variables are called arguments.

Q4- What are different types of access modifiers?

A4- public: Any thing declared as public can be accessed from anywhere. private: Any thing declared as private can't be seen outside of its class. protected: Any thing declared as protected can be accessed by classes in the same package and subclasses in the other packages. default modifier : Can be accessed only to classes in the same package.

Q5- What is UNICODE?

A5- Unicode is used for internal representation of characters and strings and it uses 16 bits to represent each other.

Q6- What is the difference between String and String Buffer?

A6- a) String objects are constants and immutable whereas StringBuffer objects are not. b) String class supports constant strings whereas StringBuffer class supports growable and modifiable strings.

Q7- What is the difference between Array and vector?

A7- Array is a set of related data type and static whereas vector is a growable array of objects and dynamic.

Q8- What are wrapper classes?

A8- Wrapper classes are classes that allow primitive types to be accessed as objects.

Q9- What are Vector?

A9- Vector : The Vector class provides the capability to implement a growable array of objects.

Q10- What is a stream ?

A10- A Stream is an abstraction that either produces or consumes information.

Title of the Practical: Programs to design Single Inheritance.

Q10- What is the Inheritance?

A10- Inheritance is the process by which object of one class acquire the properties of object of another class.

Q2- What is the Package?

A2- Package is the collection of class stored in a folder. These class can be used in any java program.

Q3- What is meant by Inheritance and what are its advantages?

A3- Inheritance is the process of inheriting all the features from a class. The advantages of inheritance are reusability of code and accessibility of variables and methods of the super class by subclasses.

Q4- What is an abstract class?

A4- An abstract class is a class designed with implementation gaps for subclasses to fill in and is deliberately incomplete.

Q5- What is a clone able interface and how many methods does it contain?

A5- It is not having any method because it is a TAGGED or MARKER interface.

Q6- What is the difference between abstract class and interface?

A6- a) All the methods declared inside an interface are abstract whereas abstract class must have at least one abstract method and others may be concrete or abstract. b) In abstract class, key word abstract must be used for the methods whereas interface we need not use that keyword for the methods. c) Abstract class must have subclasses whereas interface can't have subclasses.

Q7- Can you have an inner class inside a method and what variables can you access?

A7- Yes, we can have an inner class inside a method and final variables can be accessed.

Q8- What is the class and interface in java to create thread and which is the most advantageous method?

A8- Thread class and Runnable interface can be used to create threads and using Runnable interface is the most advantageous method to create threads because we need not extend thread class here.

Q9- What are the states associated in the thread?

A9- Thread contains ready, running, waiting and dead states.

Q10- What is deadlock?

A10- When two threads are waiting each other and can't precede the program is said to be deadlock.

Title of the Practical: Programs to design interface.

Q1- What is the Interfaces?

A1- Using the keyword interface ,you can fully abstract a class' interface from its implementation.

Q2-What is The Try-Catch-Finally ?

A2- 1.Java uses a keyword Try to handle a run-time error, simply enclose the code that you want to monitor inside a **try** block. Immediately following the **try** block.

2.include a **catch** clause that specifies the exception type that you wish to catch.

3.finally block can be used to handle any exception generated within a try block.

4.When a finally block is defined , this is guaranteed to execute ,regardless of whether or not an exception is thrown.

Q3-What are the Throw statements ?

A3- you have only been catching exceptions that are thrown by the Java run-time system.

Q4-What are the Throws ?

A4- If a method is capable of causing an exception that it does not handle, it must specify this behavior so that callers of the method can guard themselves against that exception.

Q5- What is Java?

A5- Java is an object-oriented programming language developed initially by James Gosling and colleagues at Sun Microsystems.

Q6- Can you have virtual functions in Java?

A6- Yes, all functions in Java are virtual by default.

Q7-What is the NullPointerException ?

A7- When an object is not initialized, the default value is null.

Q8- Name the containers which uses Border Layout as their default layout?

A8- Containers which uses Border Layout as their default are: window, Frame and Dialog classes.

Q9- What is Collection API ?

A9- The Collection API is a set of classes and interfaces that support operation on collections of objects.

Q10- What is a transient variable in Java?

A10- A transient variable is a variable that may not be serialized. If you don't want some field to be serialized, you can mark that field transient or static.

Title of the Practical: Program to design exception by use Try-Catch-Finally.

Q1-. What is the exception ?

A1- An exception is a condition that is caused by a run-time error in the program.

Q2- What is the difference between an argument and a parameter?

A2- While defining method, variables passed in the method are called parameters. While using those methods, values passed to those variables are called arguments.

Q3- What are different types of access modifiers?

A3- public: Any thing declared as public can be accessed from anywhere. private: Any thing declared as private can't be seen outside of its class. protected: Any thing declared as protected can be accessed by classes in the same package and subclasses in the other packages. default modifier : Can be accessed only to classes in the same package.

Q4- What is Garbage Collection and how to call it explicitly?

A4- When an object is no longer referred to by any variable, java automatically reclaims memory used by that object. This is known as garbage collection. System. gc() method may be used to call it explicitly.

Q5- What is finalize() method?

A5-finalize () method is used just before an object is destroyed and can be called just prior to garbage collection.

Q6- What are Transient and Volatile Modifiers?

A6- Transient: The transient modifier applies to variables only and it is not stored as part of its object's Persistent state. Transient variables are not serialized. Volatile: Volatile modifier applies to variables only and it tells the compiler that the variable modified by volatile can be changed unexpectedly by other parts of the program.

Q7- What is the difference between this() and super()?

A7- this() can be used to invoke a constructor of the same class whereas super() can be used to invoke a super class constructor.

Q8- What is the difference between superclass and subclass?

A8- A super class is a class that is inherited whereas sub class is a class that does the inheriting.

Q9- What modifiers may be used with top-level class?

A9- public, abstract and final can be used for top-level class.

Q10- What is the difference between exception and error?

A10- The exception class defines mild error conditions that your program encounters. Exceptions can occur when trying to open the file, which does not exist, the network connection is disrupted, operands being manipulated are out of prescribed ranges, the class file you are interested in loading is missing. The error class defines serious error conditions that you should not attempt to recover from. In most cases it is advisable to let the program terminate when such an error is encountered.

Title of the Practical: Program to design multi-threading.

Q1- What is the multithreaded?

A1- A multithreaded program contains two or more parts that can run concurrently .Each part of such a program is called a thread , and each thread define a separate path of execution.

Q2- What is the thread ?

A2- A thread is similar to a program that has a single flow of control.It has a beginning,a body,and an end ,and executes commands sequentially.

Q3- What is the **Inter thread communication** ?

A3- Java includes an elegant interprocess communication mechanism via the **wait()**, **notify()**, and **notifyAll()** methods.

Q4- What is the **Threads synchronization** ?

A4- When two or more threads need access to a shared resource, they need some way to ensure that the resource will be used by only one thread at a time. The process by which this is achieved is called *synchronization*.

Q5- What is the synchronized Methods ?

A5- There are Three synchronized Methods : The **call()** method, **run()** method,and **sleep()** method.

Q6- What is the difference between process and thread?

A6- Process is a program in execution whereas thread is a separate path of execution in a program.

Q7- What are synchronized methods and synchronized statements?

A7- Synchronized methods are methods that are used to control access to a method or an object. A thread only executes a synchronized method after it has acquired the lock for the method's object or class. Synchronized statements are similar to synchronized methods. A synchronized statement can only be executed after a thread has acquired the lock for the object or class referenced in the synchronized statement.

Q8- What are three ways in which a thread can enter the waiting state?

A8- A thread can enter the waiting state by invoking its sleep() method, by blocking on IO, by unsuccessfully attempting to acquire an object's lock, or by invoking an object's wait() method. It can also enter the waiting state by invoking its (deprecated) suspend() method.

Q9- Can a lock be acquired on a class?

A9- Yes, a lock can be acquired on a class. This lock is acquired on the class's Class object.

Q10- What is the preferred size of a component?

A10- The preferred size of a component is the minimum component size that will allow the component to display normally.

Title of the Practical: Program to design Applet skeleton.

Q1- What is the difference between an applet and a servlet?

A1- a) Servlets are to servers what applets are to browsers. b) Applets must have graphical user interfaces whereas servlets have no graphical user interfaces.

Q2- What is Inet address?

A2- Every computer connected to a network has an IP address. An IP address is a number that uniquely identifies each computer on the Net. An IP address is a 32-bit number.

Q3- What is an event and what are the models available for event handling?

A3- An event is an event object that describes a state of change in a source. In other words, event occurs when an action is generated, like pressing button, clicking mouse, selecting a list, etc. There are two types of models for handling events and they are: a) event-inheritance model and b) event-delegation model

Q4- When do you use codebase in applet?

A4- When the applet class file is not in the same directory, codebase is used.

Q5- What is the difference between Assignment and Initialization?

A5- Assignment can be done as many times as desired whereas initialization can be done only once.

Q6- What is source and listener?

A6- source : A source is an object that generates an event. This occurs when the internal state of that object changes in some way. listener : A listener is an object that is notified when an event occurs. It has two major requirements. First, it must have been registered with one or more sources to receive notifications about specific types of events. Second, it must implement methods to receive and process these notifications.

Q7- What is adapter class?

A7- An adapter class provides an empty implementation of all methods in an event listener interface

Q8- What is meant by controls and what are different types of controls in AWT?

A8- Controls are components that allow a user to interact with your application and the AWT supports the following types of controls: Labels, Push Buttons, Check Boxes, Choice Lists, Lists, Scrollbars, Text Components. These controls are subclasses of Component.

Q9- What is servlet?

A9- Servlets are modules that extend request/response-oriented servers, such as java-enabled web servers. For example, a servlet might be responsible for taking data in an HTML order-entry form and applying the business logic used to update a company's order database.

Q10- What is URL?

A10- URL stands for Uniform Resource Locator and it points to resource files on the Internet. URL has four components: http://www. address. com:80/index.html, where http - protocol name, address - IP address or host name, 80 - port number and index.html - file path.