**Content**

|  |  |  |
| --- | --- | --- |
| **S.NO** | **Topic** | **Page No** |
| 1 | Theory on non-static | 1-4 |
| 2 | Non-static member | 5-19 |
| 3 | Constructor | 20-28 |
| 4 | IIB | 29-40 |

|  |  |  |
| --- | --- | --- |
|  | | **Describe non-static global members.**  Non-static global members can’t be used inside a static context without a reference variable.  To use non-static global members in a static context a reference variable is required.  Non-static global members are loaded in memory while creating an object of a class.  Non-static global members are loading into memory only once for an object.  In order, to access non-static members from the object maximum 1 reference variable is required, using reference variable non-static global variable can be accessed. |
|  | **What is a reference variable?**  All classes, interface,enum types are considered as derived datatypes. A variable with its datatype as derived datatype is called as a reference variable.  A reference variable can be created as follow  derivedDatatype refVar = new Constructor;  (object creation to refVar(reference Variable)) | | |
|  | **How many derived datatypes are there in java?**  Enormous. All classes, interfaces, enum defined within the lib as well as created by programmer. | | |
|  | **Different ways to develop a multiple classes.**   1. Developing separate independent java files for each independent classes. 2. Developing multiple classes in one java file 3. Developing separate classes in separate java files and using in each other. | | |
|  | **Can a static keyword be used with members within block?**  No. ‘static’ keyword can be used only with members of the class.  On using static within a block it results into compile time error. | | |
|  | **Where does object, local variable, static members,reference variable get created in memory?**  Objects and static members are created on heap.  Local variables and reference variable are created on stack. | | |
|  | **To refer non-static members associated with a specific object. Write a syntax.**  derivedDatatype referenceVar = new Constructor;  referenceVar.nonStaticMemberName; | | |
|  | **For an object, how many reference variable can be there ?**  An object can have any no. of reference variables. | | |
|  | **Can an object be referred from multiple methods?**  Yes.If methods have a reference variable to object. | | |
|  | **Is it possible to reach object from multiple methods?**  Yes, if there are reference variable from multiple methods. | | |
|  | **How many objects can be referred by reference variable at any point of time?**  A reference variable can refer maximum one object at a time. | | |
|  | **Define: Live Object.**  A object with atleast one reference variable is called as a live object. | | |
|  | **Define : Abandoned Object.**  A object which doesn’t have minimum 1 reference variable is called as an abandoned object. | | |
|  | **What type of object can a reference variable refer to?**  A reference variable can refer to an object of same derivedDatatype as the one for reference variable. | | |
|  | **What happens if non static member is being referred in static context without reference variable?**  Compile time error. Stating as : non-static [member] \_\_\_ cannot be referenced from static context.  [member]🡪 method, variable 🡪 name of method or variable. | | |
|  | **Define : Pass-by-value.**  While calling a method modification in target method is not affecting source it is pass-by-value.  Primitive datatype variables will be passed by value. | | |
|  | **Define : Pass-by-reference.**  While calling a method modification in target method is affecting source it is pass-by-reference.  Derived datatype variables will be passed by reference. | | |
|  | **What is a constructor?**  A constructor is a non-static initialization block with same name as a class name and no return type. | | |
|  | **How many constructors can a class have?**  A class can have any number of constructors. But each constructor should have different signatures. | | |
|  | **What do you mean by constructor overloading?**  Incorporating multiple constructors in a same class with different signature is called as constructor overloading**.** | | |
|  | **Can a object be created using any constructor?**  No. To create an object of a class you need to specify one of the available constructors for the class. | | |
|  | **When does a compiler provide default no-arg constructor?**  Compiler provides no-arg default constructor only when a class does not contain any constructor. | | |
|  | **By default, how many constructors get executed while object is being created?**  Only one. | | |
|  | **Is multiple constructor execution possible for an object of a java class?**  Yes. To execute more than one constructor use this statement in the constructor body. | | |
|  | **Specify difference between constructor and method.**  Method has a return type.  Constructor doesn’t have a return type. | | |
|  | **Why constructor overloading is required?**  To provide multiple ways for creating an object. | | |
|  | **Is recursion possible for constructors and methods in java?**  In case of constructor if there is recursive calling code then it will result in compile-time error.  In case of method, if there is recursive calling code then compilation will be successful but it will result in runtime error. | | |
|  | **What is the difference between SIB and constructor?**  SIB is executed while loading class into memory.  Constructor executes while object is being created. | | |
|  | **What is the purpose of Instance Initialization Block (IIB).**  IIB is meant for code re-usability purpose. | | |
|  | **How many times does IIB get executed when multiple constructors are executed for object creation?**  IIB is executing only once for an object though multiple constructors are executing for one object creation.  IIB execution is object-wise and not constructor-wise. | | |
|  | **Usage of global variable inside initializer with forward reference causes** Illegal Forward Reference | | |
|  | **Is usage of method inside initializer with forward reference possible?**  Yes. It is possible. | | |
|  | **Is it possible to develop an empty .java file? Can it run?**  Yes. It is possible. On compilation, it won’t generate .class file since no class is available. Since .class file is not generated it can’t run. | | |
|  | **What are the different types of members a java file can contain?**  A java file can have any number of enum, classes, annotations and interfaces in a java file. | | |