Q.1) What is Inheritance in Java ?

Ans:- Deriving new classes from the existing class so that new classes will acquire all the features of existing class is called inheritance.

Q.2) What is superclass and subclass ?

Ans:- The existing class from which new classes acquires the features of existing class is called “Super class” and the new derived class that acquires the features of super class is called “sub class”.

Q.3) How is Inheritance implemented/achieved in Java ?

Ans:- To implement the inheritance in java , we use the “extends” keywords . Such as “ Child class name extends super class name”.

Q.4) What is polymorphism ?

Ans:- Polymorphism provides the flexibility in writing a program in such a way that the programmer uses same method call to perform different operations depending upon the requirements.

Q.5) Differentiate between method overloading and overriding ?

Ans:- Method Overloading :-

a) In this concept several methods can be exist in same methods’ names but with different types of parameters or different numbers of parameters in the same class .

b) In method loading all tasks will be executed of all the methods.

Method overriding :-

a) In this concept , if we create a new method in the same name of a existing method then all the tasks of existing method is over written by the new tasks.

b) In method overriding only the new tasks will be executed of new method.

Q.6) What is an abstraction explained with an Example ?

Ans:- A class contains lot of data and the user does not need the entire data , the user requires only some part of available data . In this case we can hide the unnecessary data from the user and expose only that data that user requires. This is called abstraction.

Q.7) What is the difference between an abstract method and final method in Java? Explain with an example.

Ans:- Abstract method:- a) It is a method without any method body .

b) An abstract method is written when the same method has to perform different task depending on the object calling .

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c) We can override the abstract method . It is the only way to use an abstract method.

Final method :- a) When a method is declared as final , it cannot be overridden by a sub class.

b) This is useful for the methods that are part of the public class API .

c) We cannot override or modified the final method also we cannot extends the final method.

Q.8) What is the final class in Java ?

Ans:- The final class is the class that is declared with final keyword . We can restrict class inheritance by making use of final class .The compiler throws error if we try to inherit final class.

Q.9) Differentiate between abstraction and encapsulation ?

Ans:- Abstraction:- a) Abstraction is the process of hiding the implementation details of a system . from the user.

b) It reduce the complexity of the code and increase the readability.

Encapsulation:- a) It is the processes of hiding data and controlling the visibility of the code.

b) It isolates the members of the class from the members of another class .

Q.10) Difference between Runtime and compile time polymorphism explain with an example.

Ans:- **Run-Time Polymorphism:** Whenever an object is bound with the functionality at run time, this is known as runtime polymorphism. The runtime polymorphism can be achieved by method overriding. Java virtual machine determines the proper method to call at the runtime, not at the compile time. It is also called dynamic or late binding.

Compile Time Polymorphism: Whenever an object is bound with its functionality at the compile time, this is known as the compile-time polymorphism. At compile-time, java knows which method to call by checking the method signatures. So this is called compile-time polymorphism or static or early binding. Compile-time polymorphism is achieved through method overloading.