**21. What is inheritance?**

-inheritance is defined as the process of deriving the properties and characteristics of another class. It provides the ability to create a new class from an existing class. It is the most essential concept of the oops(Object-Oriented programming approach).

**22-Which inheritance is not supported by Dart? Why? B3. What is advantage of inheritance?**

**-**Multiple Inheritance: This inheritance occurs when a class inherits more than one parent class. Dart doesn't support this. Multi-Level Inheritance: This inheritance occurs when a class inherits another child class.

Reduced Code Duplication: Inheritance reduces code duplication by allowing derived classes to reuse the properties and methods defined in the base class.

**23-Difference between inheritance and encapsulation. B5. Difference between inheritance and abstraction?**

Encapsulation allows us to hide implementation details and provide controlled access to the data and behavior of an object. Inheritance facilitates code reuse and supports hierarchical relationships between classes.

Inheritance facilitates code reusability and promotes a hierarchical structure, while abstraction simplifies complex systems and enforces a high-level design.

**24-Difference between inheritance and polymorphism**

-Inheritance supports the concept of reusability and reduces code length in object-oriented programming. Polymorphism allows the object to decide which form of the function to implement at compile-time (overloading) as well as run-time (overriding).

**25-Can we override static method in Dart?**

-In Dart, it is not possible to override a static method.

**26-Can we overload static method in Dart?**

**-**In Dart, it is not possible to override a static method.

**27-Can a class implement more than one interface? B10. Can a class extend more than one class in Dart?**

**-**Dart has no interface keyword. Instead, all classes are implicit interfaces. Use an abstract class as an interface. A class can implement multiple interfaces but only can extend a single class.

**28-Can an interface extend more than one interface in Dart?**

-A class can implement multiple interfaces, and it must implement all the methods and properties defined in each interface.

**29-What will happen if a class implements two interfaces and they both have a method with same name and signature?**

**-**the implementing class can implement both interface methods with a single concrete method.

**30-Can we pass an object of a subclass to a method expecting an object of the super class? B14. Are static members inherited to sub classes?**

-yes, you can pass that because subclass and superclass are related to each other by Inheritance which provides IS-A property.

**32-How do you restrict a member of a class from inheriting by its sub classes?**

-You can prevent a class from being subclassed by using the final keyword in the class's declaration.

**33-How do you implement multiple inheritance in Dart?**

**-**Dart does not support multiple inheritance, but you can use mixins to achieve a similar effect.

34**-Can a class extend by itself in Dart?**

-Dart allows single inheritance, which means a class can extend from a single parent.

**35-How do you override a private method in Dart?**

-Create a public method in library class and pass that private method in it. You can have the access of that private method as defined public method.

**36-When to overload a method in Dart and when to override it?**

**-**overloading occurs when methods in the same class have the same method name but different parameters, whereas overriding occurs when two methods have the same method name and parameters.

**38-How do you prevent overriding a Dart method without using the final modifier?**

**-**you can also use static and private modifier to prevent a method from being overridden.

**39-What are the rules of method overriding in Dart?**

* **-**The overriding method (the child class method) must be declared with the same configuration as the overridden method (the superclass method).
* The overriding method must be defined in the subclass, not in the same class.

**40- Difference between method overriding and overloading in Dart?**

**-** Method Overloading is the concept of defining two or more methods with the same name but different signatures. Method Overriding is the concept of defining two or more identical methods, having the same name and signatures

**41- What happens when a class implements two interfaces and both declare field (variable) with same name?**

- if a class implements two interfaces and each interface declares a method with same signature and return type then in effect there is only one method, and they are not distinguishable. This means the class can implement only one method by that name and it does not matter to which interface does that method belong to

**42- Can a subclass instance method override a superclass static method?**

- No, we cannot override static methods because method overriding is based on dynamic binding at runtime and the static methods are bonded using static binding at compile time. So, we cannot override static methods.

**43- Can a subclass static method hide superclass instance method?**

- If a subclass defines a static method with the same signature as a static method in the superclass, then the method in the subclass hides the one in the superclass.

**44- Can a superclass access subclass member?**

- No, a superclass has no knowledge of its subclasses.

**45- Difference between object oriented and object based language.**

- Object-based languages need not support inheritance or subtyping, but those that do are also termed object-oriented. Object-based languages that do not support inheritance or subtyping are usually not considered to be true object-oriented languages.