1)Describe the newly added features in Java 8?

-Lambda expression

Functional Interfaces

Method References

Default method

Stream API

Date Time API

Optional

Nashorn

2)what is stream api?

-Strim api is used to proccessing the bulk object of collection.

3)What are static methods in Interfaces?

-Static methods, which contains method implementation is owned by the interface and is invoked using the name of the interface,

it is suitable for defining the utility methods and cannot be overridden.

4)What are some standard Java pre-defined functional interfaces?

-Some of the famous pre-defined functional interfaces from previous Java versions are Runnable, Callable, Comparator, and Comparable.

While Java 8 introduces functional interfaces like Supplier, Consumer, Predicate, etc.

5)What is the lambda expression in Java and How does a lambda expression relate to a functional interface?

-Lambda expression is a type of function without a name. It may or may not have results and parameters.

It is known as an anonymous function as it does not have type information by itself. It is executed on-demand.

It is beneficial in iterating, filtering, and extracting data from a collection.

As lambda expressions are similar to anonymous functions, they can only be applied to the single abstract method of Functional Interface.

It will infer the return type, type, and several arguments from the signature of the abstract method of functional interface.

6)What is the basic syntax of a lambda expression?

-FunctionalInterface fi = (String name) -> {

System.out.println("Hello "+name);

return "Hello "+name;

}

7)what is Method Reference?

-Method reference is a compact way of referring to a method of functional interface.

It is used to refer to a method without invoking it. :: (double colon) is used for describing the method reference. The syntax is class::methodName

For e.g.

Integer::parseInt(str) \\ method reference

str -> Integer.ParseInt(str); \\ equivalent lambda

8)What does the String::ValueOf expression mean?

-It is a static method reference to method Valueof() of class String. It will return the string representation of the argument passed.

9)What is an Optional class?

-Optional is a container type which may or may not contain value i.e. zero(null) or one(not-null) value.

It is part of java.util package. There are pre-defined methods like isPresent(), which returns true if the value is present or else false and the method get(), which will return the value if it is present.

10)What are Intermediate and Terminal operations?

Intermediate Operations:

Process the stream elements.

Typically transforms a stream into another stream.

Are lazy, i.e., not executed till a terminal operation is invoked.

Does internal iteration of all source elements.

Any number of operations can be chained in the processing pipeline.

Operations are applied as per the defined order.

Intermediate operations are mostly lambda functions.

Terminal Operations:

Kick-starts the Stream pipeline.

used to collect the processed Stream data.

11) What is the feature of the new Date and Time API in Java 8?

Immutable classes and Thread-safe

Timezone support

Fluent methods for object creation and arithmetic

Addresses I18N issue for earlier APIs

Influenced by popular joda-time package

All packages are based on the ISO-8601 calendar system

12)What are the important packages for the new Data and Time API?

java.time

dates

times

Instants

durations

time-zones

periods

Java.time.format

Java.time.temporal

java.time.zone

13)Explain with example, LocalDate, LocalTime, and LocalDateTime APIs.

LocalDate

Date with no time component

Default format - yyyy-MM-dd (2020-02-20)

LocalDate today = LocalDate.now(); // gives todayâ€™s date

LocalDate aDate = LocalDate.of(2011, 12, 30); //(year, month, date)

LocalTime

Time with no date with nanosecond precision

Default format - hh:mm:ss:zzz (12:06:03.015) nanosecond is optional

LocalTime now = LocalTime.now(); // gives time now

LocalTime aTime2 = LocalTime.of(18, 20, 30); // (hours, min, sec)

LocalDateTime

Holds both Date and Time

Default format - yyyy-MM-dd-HH-mm-ss.zzz (2020-02-20T12:06:03.015)

LocalDateTime timestamp = LocalDateTime.now(); // gives timestamp now

//(year, month, date, hours, min, sec)

LocalDateTime dt1 = LocalDateTime.of(2011, 12, 30, 18, 20, 30);

14)Define Nashorn in Java 8?

Nashorn is a JavaScript processing engine that is bundled with Java 8.

It provides better compliance with ECMA (European Computer Manufacturers Association) normalized JavaScript specifications and better performance at run-time than older versions.

15)How are functional interfaces and Lambda Expressions related?

Lambda expressions are applied only to the functional interfaceâ€™s abstract method.

16)What is Java 8 StringJoiner class used for?

Java 8 StringJoiner class constructs a sequence of characters separated by a delimiter so that users can create a string by passing delimiters such as hyphens and commas.

17)What is stream pipelining?

Stream pipelining is the process of chaining different operations together.

Pipelining accomplishes this function by dividing stream operations into two categories, intermediate operations, and terminal operations.

When each intermediate operation runs, it returns an instance of the stream. Thus, a user can set up an arbitrary number of intermediate operations to process data, thereby forming a processing pipeline.

At the end of the process, there must be a terminal operation to return a final value and terminate the pipeline.

18) Explain the difference between predicate and function.?

Although they are both functional interfaces, Predicate<T> is a single argument function that returns either true or false.

Function<T,R> is also a single argument function, although it returns an object instead. In this case, the â€œTâ€ represents the type of function input, and the â€œRâ€ denotes the type of result