JAVA

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Java from Basic To advance

* All interview Questions:

Q.1 What is Java?

Ans.1 Java is a class based, high level object-oriented programming language developed by "James Gosling" and his friend in the year 1995.

Q.2 JDK

JDK Basically stands for java Development Kit let see it with example just like cricketer use kit for playing his crase in that kit is same as protecting and running the program in java.

Q.3 What is Datatype?

Ans Data type Specifies the different types of values that are stored on the variables.

Types.

- Primary
  - Numeric
    - Byte
    - Short
    - int
    - long
    - float
    - Double
  - char
  - Boolean
- Secondary (User-defined)
  - class
  - interface
  - Arrays
  - string

Q. What is Variable?

Ans Variable is the name of memory location where we stored different types of values.

```
int a = 10;
print (a);
```

Types
- Static Type variable
- Local Type Variable
- Instance Type variable.

- Static variable - A variable is declared as static it cannot Local. We can create a single copy of static variable & share it among all the instances.

- Local Variable - Variable declared inside ~~class~~ the body ~~but~~ outside method. It cannot be defined with the static keyword.
- Instance Variable -
A variable is declared inside class but outside method.

Q.5 What is keyword. full explanation?

Ans 5 Keywords are the reserved word. whose meaning is already defined in the java Compiler.

Note: One can't use keyword for our personal use.
Keywords are Case Sensitive. → a → a
a → A

Java Keywords :-

Byte	else	extends	import	Switch
short	for	implements	class	Case
int	do	final	interface	Const *
long	while	finally	new	goto *
float	break	try	native	strictfp **
double	continue	catch	instance of	enum
char	default	throw	Package	assert
boolean	Private	throws	return	abstract
if	Protected	Static	this	transient
	Public	volatile.	Super	Synchronized

Note:	* (Not used) ** (added in 1.2 version) *** (1.4v) *** (5.0)v)	Null, true, false used as a literals in java.

Q.6 What is identifier? full explanation?

Ans6 identifiers refers to the name of the variables, methods, classes and so on.

Ex
```
int a;
void M1 ()  ---> identifier
class A
```

Q7 How to take input & output in Java.

Ans7. input → Scanner class (java.util.Scanner)

Syntax

```
Scanner Object-name = new Scanner (system.in);
```

Scanner class Methods.

1) nextInt() for integer value
2) nextLine() for string value.
3) nextDouble() for double value.

Q.8 What are the Control flow statement in java. Explain Each?

Ans 1. Conditional statement

1. If → It is used when we want to test a single condition.
2. If-else - It is used when we want to execute two statements for a single condition.
3. else-if → It is used when we have only one if blocks and multiple else-if blocks and at last else block.
4. Nested if-else → whenever, we define if-else block inside another if-else block called nested if-else.

Control flow

② Looping statement.

Loop -

Whenever we want to repeat certain statements several times then we should write those statements inside loop body.

Syntax- for (initialization; condition; incr++/Decr--)

while loop → while (condition)
{
code
}

do-while loop → do
{
statement;
}
while (condition)

for-each loop
for(datatype var1 var2)
{// statement
}

Control flow -

Transfer Statement
- Break
- Continue
- Return

Q. 9 What is Switch statement ? full Explanation.

Ans Switch is a multiple choice decision making selection statement, it is use when we want to select only (one case) out of (Multiple cases.)

Syntax:- Switch(exp)
{
case1 statement1;
break;
case2: statement2;
break;
case3: statement3
break;
default: statement
}

Q.10 What is operator ? full explanation..

Ans Operator is a Symbol that is used to perform operations according to user requirments

Types of operators :-

1. Arithemetic operator (−, +, *, /, //)
2. Relational operator (==, !=, >, >=, <=, <)
3. Logical operator.. (&&, ||, !)
4. Increment / decrement operators.

Pre/Post	pre/post
(++a/a++)	(--a/a--)
Increment	Decrement.

5 Assignment operator (=, +=)
6. Ternary operator (?:) (a>b>c)

Q.11 What is Method full Explanation ?

Ans Method is a group/block of code which take input from the user, processed it and give output.

Note: Method run only when it called.

- Code Reusability.

Types

Pre-defined
- print();
- sort();
- nextInt();
- sleep();
- concat();

User defined
- add() {-}
- vary() {-}
- Learn code()

Q.12 What is an Arrays full Explanation ?

Ans.12 Arrays is an object oriented in java, which contains similar type of data in a Contigous memory location.

Syntax: data type var-name[];

Q.13. What is Strings? full Explanation.

Ans.1. String is a predefined class in java but we can also use as a datatype

2. Strings are the sequence of character and its index start from 0 "ankit"

Syntax. String str = new String ("ANKUSH");

Q.14 What is Method overloading?

Ans A class having same name but different parameter is known as method overloading.

Q.15 What is Method overriding?

Ans If a Subclass has same method as Declared in main class.

* OOPs Concept *

Q.16. What is class & object? full Explanation.

Ans16 class is a group of elements having common properties and behaviours.

Note:- class is virtual

object is real

person [p] = new person

Q.17 What is Constructor? full Explanation.

Ans. Constructor is a special type of method whose name is same as class name.

1.) The main purpose of Constructor is initialized the object.

2.) Every java class has Constructor.

3.) A constructor is automatically called at the time of object creation.

4.) A constructor never contain any return type including void

Q.18 What is default constructor?

Ans. A constructor which does not have any parameter is called default constructor.

Syntax –

```
class A
{
    A ( )   No any parameter
    {
    }
}
```

Q.19. What is Parameterized constructor?

Ans. A Constructor through which we can pass one or more parameters is called parameterized constructor.

Syntax →

```
class A
{
    A(int x, string y)
    {

    }
}
```

Q.20 What is Copy Constructor? Full detail.

Ans Whenever we pass object reference to the Constructor then it is called Copy Constructor.

Syntax →

```
class People
{
    class name( obj xy)
    {

    }
}
```

Q.21 What is Private Constructor?

In java, it is possible to write a constructor as a private but according to the rule we can't access private member outside of class.

Syntax class class-name
{ private class name ( ) }

Q.22 Super Keyword ? Full Explanation.

Ans Super keyword refers to the objects of super class it is used when we want to call the super class variable, method & constructor throug sub-class object.

Note:- (i) Whenever the super class & sub class variable & method name both are same than it can be used only.

(ii) To avoid the confusion between super class and subclasses variables & methods that have same name we should use super keyword.

Q.23 What is This Keyword ?

Ans 23 (i) This keyword refers to the current object inside a method or Constructor.

(ii) Whenver the name of instance and local variable both are same then our runtime enviroments (JVM) gets confused that which one is local variable & which one is instance variable, to avoid this problem we use this keyword.

Q.24 What is final Keyword ? Back

Ans 24. To restrict the user, it can be applied with variable. The value will remain constant throughout the program execution.

Q.25 What is Pass by Value ? Pass by Reference ?

Ans.25. In Pass by value the paramter values are copied to another var and the object copy is passed.
while in Pass by refrence the actual copy of refrence is passed.

Q.26. Difference between instance & Static Block.

Instance	Static
1. It deals with object	It deals with class.
2. Executed at the time of obj Creation.	Executed at the time of loaded .class file in JVM.
⊙ With Program	⊙ with Program.
3. No any Keyword required.	static Keyword is required.
4. Static & non-static variable Can be accessed inside the instance block.	Only static variable can be accessed inside the static block.

Q.27 What is Encapsulation ?

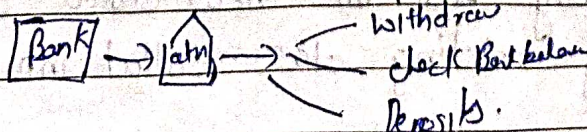
Ans. Encapsulation is a mechanism through which we can binding the data members and member method in a single unit.

Ex

```
class Bank
{
    Private bal;
    private pwd;
    Void deposit();
    void widthdraw();
    Void checkbal();
}
```

Q.28 What is abstraction ?

Ans 28. Abstraction is nothing but hiding the essential information and heighlight the only set of services that is required.



In java we can acheive abstraction in two ways:-

1. abstract class (0-100%) — ①
   interface (100%)

Abstract class

- If a class contain atleast one abstract method is called Abstract class.
- We can't create objects of Abstract class.
- It contains both abstract and non-abstract method.
- Whenver the action is common but implementations are different then we should use abstract method.

Q.29. What is interface?

A. Interface is a blue print of a class, which contains only abstract method. → The thing which exist in thought called abstract

To acheive interface in java. by the help of implements / interface keyword.

Note:- By default variables are public + static + final inside a inteface.

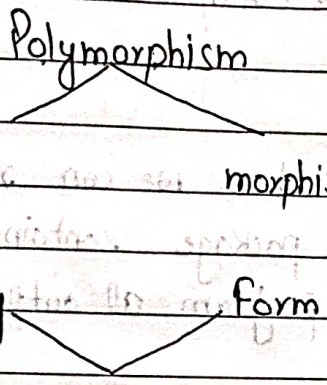
2. By dyault methods are public and abstract
3. From JDK 1.8V onwards Interface can have dyault & static methods.

Q.30 / What is Inheritence.

A. When we construct a new class from existing class in such a way that the new class access all features & properties of existing class, called inheritence.

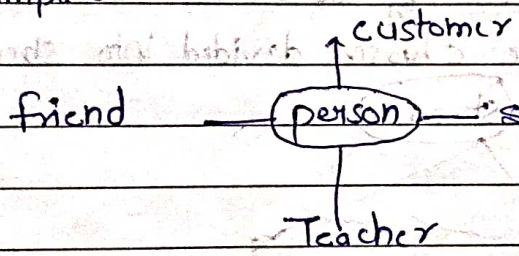
Note:- (i) In Java Extend Keyword is used to perform inheritence.
(ii) It provides code Reusability.
(iii) We can't access private members of class through inheritence.
(iv) A sub class contains all the features of Superclass, so, we should create the object of sub class.
(v) Method overriding only possible through inheritence.

Q.3 → Polymorphism.



Polymorphism is the greek word whose meaning is "same object having different behaviour"

for example:-



i) Void person (Teacher)
ii) Void person (Students)
iii) Void person (friend)
(iv) Void person (Customer.)

Polymorphism Types

1. Compile time Polymorphism.
Compile time polymorphism is implemented through Method overloading and operator overloading.
2. Run time Polymorphism is implement through method overriding.

Q.32 What is Exception?

Ans:32 An Exception is unwanted or unexpected Event which occurs during the execution of a program the disturb the normal flow of Program.

Q.33 What is Error?

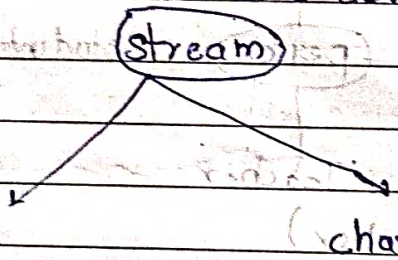
Ans:33 Error is Something that contributed to a program not capable of Executing sometime collapse as well.

Q.34 file Handling?

Ans:34 file Handling defines how we can read and write data on a file java IO package contains all the classes through which we can perform all output and input operations in the file.

Q.35 Stream?

Stream is a Sequence of data on the basis of java i.o package all the classes devided into stream.



Q.36 What is Package?

Ans:36 A package arrange number of classes, interface and Sub-package of Same type into a particular group.

Note- Package is nothing but folder in windows.

Q.37 What is Multithreading ? With Example.

Ans. Multithreading is a process to execute multiple threads at the same time without dependency of other threads called multithreading.

Q.38 What is thread ?

Ans Thread is a predefined class which is available in java.lang package.

Thread is a basic unit of CPU and it is well known for independent execution.. Single unit of execution is called Thread.

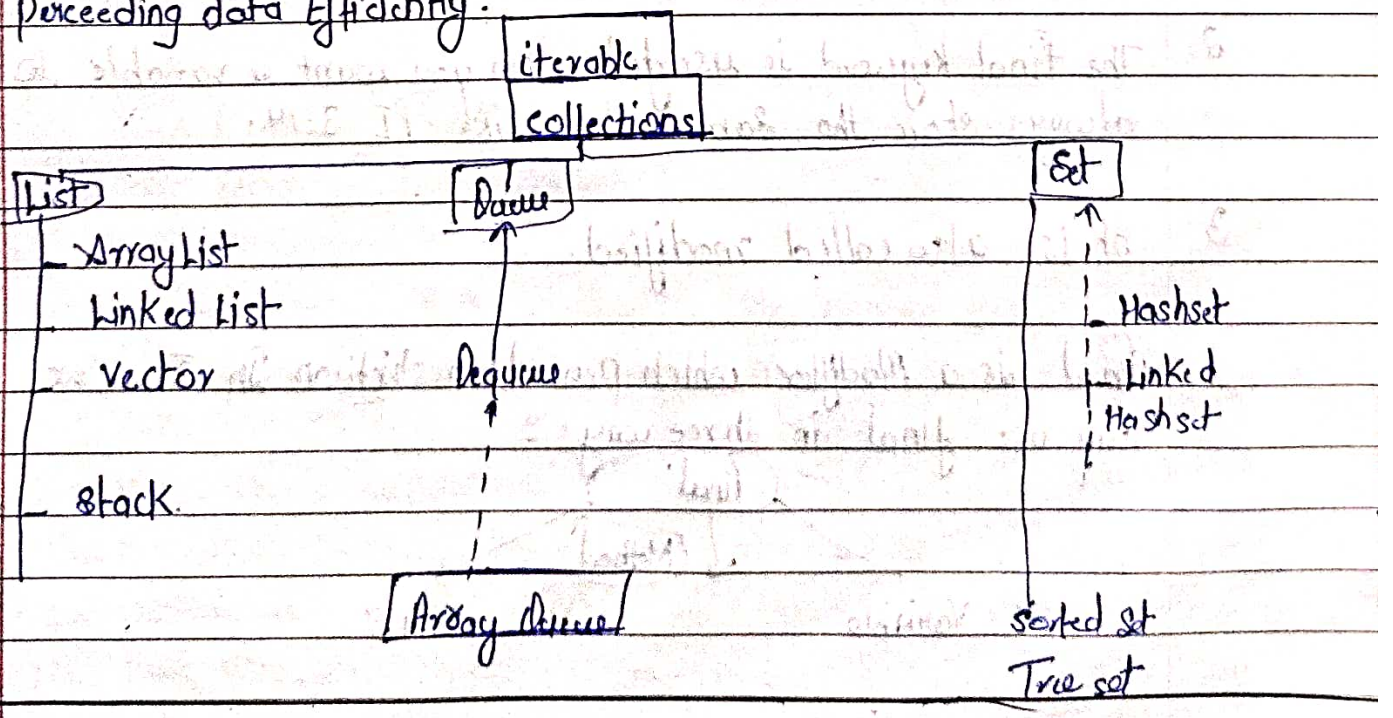
A Task or Program devided into many unit.

Q.39 How to Create Thread in Java ?

1. By Extending - Thread class.
2. By implementing Runnable interface.

Q.40 What is Collections ?

Ans Java Collections are the set of Pre-defined classes & interfaces that helps programmer to perform different kind of data structure operations like - Sorting, Searching, traversing, storing and perceeding data Efficiently.



Q.41. What is Serialization and deserialization?

Ans41 Serillization is the process of converting an object into a sequence of Bytes which can be persisted to a disk or or database or can be sent through streams.
The reverse process of creating an object from sequence of Byte is called Deserialization.

Q.42 What is lambda Expression?

Ans 42 Lambda Expression is the short block of code that takes in parameter and returns a value. Lambda expression are similar to methods, but they do not need a name and they can be implemented right in the body of a method.
It can be only written for functional interface.

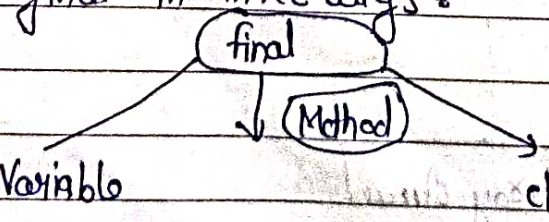
Q.43. What is final Keyword in java?

Ans: 43). The final Keyword is a non access modifiers used for class; attributes and methods, which makes them non-changable. (impossible to inherit or override)

2. The final Keyword is used when you want a variable to always store the same value; like PI 3.14.

3. It is also called modified.

final is a Modifier which provide restriction In Java, we can use final in three ways:



- final variable :- Once we declare variable as final we can't perform re-assignment.

Syntax final int A=10;

* final method :- Whenever we declared a method as final it cannot be overriden to our extended class.

Syntax :→ final void m1()
{
}

* final class :- Whenever we declare a class as a final it can't be extended or inherited to subclasses.

Syntax → final class A
{
}

Q.44 Diffrence Between Array and Arraylist ?

Ans.44 1. Array is a fixed length data structure

Arraylist is a variable length collection class.

2. We cannot change the length of array once created in java.

Arraylist cannot be change.

3 Array can contain Both primitives and objects in java.

We cannot store primitives in Arraylist it can store only objects.

Q. Difference Between Throw and Throws Keyword-

	Throw	Throws.
1.	Java Throw Keyword is used to throw an exception Explicitly in the code inside the function or block of code.	Java throws Keyword is used in method signature to declare
2.	The throw Keyword is followed By an instance of exception to be thrown.	The throws Keyword is followed by class name of exception to be thrown.
3.	Throws is used with in the methods	Throws is used with in the method Signature.