1) What is IO ?

Ans IO operation are Required when you read and Write data from following Source or destination.

→1) Data Source (Hard Drive, DVD, USB etc).
→2) Network. (TCP or UDP Socket Connections).
→3) Hardware. (Console, Keyboard).

2) What are the Key classes of IO ?

Ans) 1) Reader

2) Writter

3) InputStream

4) OutPutStream

→ InputStream :- Class or its Subclasses read data from a binary Source.

→ OutputStream :- class or its Subclasses write data to a binary target.

→ Reader :- class or its Subclasses read data from text Source.

→ Writter :- class and its Subclasses write data to a text target.

3) What is Scanner class ?

Ans Scanner class is a Simple text Scanner which can parse primitive type and String Using Regular expressions.

Package → Java.util.Scanner.

4) flush() Vs close() ?

Ans → flush() is Used to moves dirty data to its destination and clear the buffer.

→ Method close() internally Calls flush() method and then close the target Stream.

5) how to Write text data character by charact

Ans → with the help of FileWritter.

6) How to write text data line by Line

Ans Using PrintWritter.

8) How to Read text data character by character?

Ans Using FileReader.

9) How to Read text data line by line ?

Ans Using BufferedReader.

10) How to Write binary data byte by byte ?

Ans Using FileOutPutStream.

11) How to Write binary data as byte array ?

Ans Using BufferedOutPutStream.

12) How to Read Binary data as byte by byte ?

Ans Using FileInputStream.

13) How to Read Binary data as byte array ?

Ans BufferedInputStream

14) How to Write Primitive data ?

Ans Using FileOutPutStream and DataOutPutStream.

15) How to Read Primitive data

Ans Using fileInputStream and dataInputStream.

16) Categorise of data ?

Ans Data Can be Categorized into two Categories

1) Text Data : Basic

2) Binary data

-> Text Data :-

Series of character is called text data.

-> Binary Data :-

Series of Bytes is called Binary Data.

17) What is Text-file ?

Ans File storing text is called Text-file.

18) What is Binary-file ?

Ans File storing Binary data is called Binary-file.

19) how to Persist / write an Java Object ?

Ans ObjectOutPutStream and FileOutPutStream.

20) How to Read an Java Object ?

Ans ObjectInputStream and FileInputStream

21) How to decorate characters into line and line into Characters ?

Ans Using Buffered Reader and BufferedWritter.

22) Which Class is Used to Convert bytes into text or Convert byte stream into character Stream or How Can you Read character by character from Keyboard ?

Ans Using InputStreamReader.

19) Which classes follows Decorator pattern

Ans Decorator Pattern followed by :-

1) Buffered I/O classes.

2) Object I/O classes.

3) data I/O classes.

24) What is Decorator Design Pattern ?

Ans It Decorates the Output of any other classes like BufferedReader

25) Why flush() is Required before closing to OutputStream / Writer ?

Ans To push data from RAM (temporary Memory) to Target.

25) How Can I append anc existing file in Java?

Ans In Order to append txt at the end of file with FileWritter we can use another parameterized Constructor that recieve two parametres i.e file name and Boolean Value.

26) What is the function of filter classes?

Ans Decorates the Input/Output Streams.

27) Difference b/w Print() and Println()?

	Println()	Print()
1)	It add new line after the message gets displayed	It does not add any new line
2)	It can work without arguments.	This method only and only ~~woks~~ works with argument, otherwise it is an Syntax error

27 Example of Externalization

```
Public class User implements Externalizable {

    Private String name
    private int age

    Public User(String name, int age) {

        this.name = name;
        this.age = age;

    }

@Override
Public Void ReadExternal (ObjectInput in) throws
    IOException, ClassNotfoundException {

    name = (String) in.readObject();

    age = in.readInt();

}

@ override
Public Void WriteExternal (ObjectOutPut out)
    throws IOException {

    Out.WriteObject(name);
    Out.WriteInt(age);
}
```

```
Public String getUserName() {
    return name ;
}

Public Void SetUserName (String Name) {
    this.name += name ;
}

Public Int getAge () {
    return age ;
}

Public Void SetAge (int age) {
    this.age = age ;
}
```

```
Public class TestExternalization {

Public Void Static Void main (String[] args)
    throws Exception {

    File f = new file ("Path");

    User u = new User ("Farhan", 29);

ObjectOutPutStream out = new ObjectOutputStream
        (new fileOutputStream (f));

    Out.WriteObject(u);

ObjectInputStream in = new ObjectInputStream (
            new fileInputStream (f));

    u = (User) in.readObject();

SOP (u.getUserName + u.getAge);
        }
    }
```

28) Example of Serialization or deserialization ?

```
Public class Student implement serializable {

    int Id ;
    String name ;

    Public Student (String name, ind Id) {

        this.Id = Id ;
        this.name = name ;
    }

Public class TestSerialize {

Public static Void main (String[] args) throws
    IOException, Exception {

Student S1 = new Student (101, "ansh");

FileOutPutStream fout = new fileOutPutStream("Path");

ObjectOutPutStream Oout = new ObjectOutPutStream("fout");

    Out.WriteObject (S1);
    Out.flush ;
    Out.close ;
    SOP ("Success");
    }
```

```
Public TestDeserialize {

Public Static Void main (String[] args) throws
    Exception, IOException {

ObjectInputStream in = new ObjectInputStream
        (new fileInputStream ("Path"));

  Student s = (student) in.readObject();

  SOP (S.id + S.name);

     in.close

   }

}
```

24 Program of Scanner class

```
Public class Scan {

Public Static Void main (String [] args ) {

    System . out . println (" Enter two number ");

    Scanner sc= new Scanner( System.in) ;

    int a= sc. nextInt() ;
    int b = sc. nextInt() ;
    int c = a+b ;

System . out . println ("Sum of Two No. = ", c) ;

        }

    }
```

30) Print or read a file Using Scanner

```
Public class Demo {
Public Static Void main(String[] args) {
FileReader reader = new FileReader ("Path/f.txt
Scanner sc = new Scanner (reader);
While (sc.hasNextInt())
    {
      String line = sc.nextline ();
      System.Out.Println (line);
    }
  }
}
```

31 Which class support Primitive language ?

Ans RandomAccessFile

32) Which design Pattern followed by filter IO classes?

Ans Decorator Design Pattern

33) How ~~Wh~~ Will you read data line by line from Keyboard

Ans Buffered Reader and Scanner class

34) How and Why do you Serialize a class ?

Ans Implementing the Serializable Interface.

for some following Situation :-

1) Object is Persisted into a file

2) Object is SentOver the Network.

3) object is goes out of JVM.

35) How many Methods is Contained by Serializable interface?

Ans It does not Contain any methods because it is a Marker interface.

36) What is Externizable interface?

It is Same a Serializable interface except it Contain's WriteExternal() and readExternal() metho This methods is Called by JVM durind serilizati and descrialization of an object

37) Difference between Serializable and Externializable In

Ans 1) Serializable interface is a marker interface it doe Go not contain any method where as Externalizable interface is Contain two method i.e readExternal and WriteExternal().

2) Serializable Interface does not Serialize Transient Variable while Externalizable Serilize the transient Variable too.

38) Interface of IO?

Ans 1) Serializable 2) Externalizable

39) Write a Program to read and Write Transient Variable.

```
Public class Book implements Externalizable {

    Private String title ;
    Private String author ;
    Private Transient int edition = 1 ;

    Public Book() { }

    Public Book (String title, String author, int edition)
        {
        this.title = title ;
        this.author = author ;
        this.editing = edition;
        }

    Public Void readExternal(ObjectInput In)
        throws IOException, classNotfoundExp {

        title = (String) In.readObject() ;
        author= (string) In.readObject() ;
        edition = In.readInt() ;

        }
```

```
Public Void writeExternal (ObjectOutput out)
  throws IoException {

        Out.writeObject (title);
        out.write Object (author);
        out.write Int (edition);

    }

Public String toString () {

return "Book [ title ="+title+", author = "+author+
        , edition = "+edition+"]";

Public static Void main(String[] args)
throws IO Exception, classNotfoundException {

    Book t = New Book ("Java", "ansh", 2);

ObjectOutputStream out = new ObjectOutputStream
        (new fileOutputStream ("serial.txt"));

    out.writeObject (t);

    out.close()

    Sop ("Success");
    }
```

```
ObjectInputStream in = new ObjectInputStream
                    (fileInputStream ("serial.txt");
  Book OldBook = (Book) in.readObject();
  in.close();
   Sop (oldBook);
      }
  }
```

40) Println() and Print() method of which class ?

Ans 1) PrintStream

2) PrintWriter

41) What is Serialization ?

Ans When an object is Converted into byte stream is called Serialization

42) What is deserialization ?

Ans When byte stream is Converted back to an object is Called deserialization.

43) What is transient Variable ?

Ans There may be some fields those those are not Required to be Serialized during Serialization are declared as transient.

44) Which Kind of Variable are defined as Transient

Ans 1) Temporary Values.

2) Calculated Values.

3) Resource Pointer.

45) Why We Use Externalization ?

Ans With the help of Externalization we Can Store extra information into object like Static and Transient Variable or Some Custom information

46) Exception classes of IO ?

1) EOFException - Raised when end of file is Reached while Reading file.

2) FileNotFoundException - Raised when a file with Specified path name does not

exist.

3) IOException - produced by failed or Interrupted IO Operations.

47) How Can I Create directories in Java ?

Ans With the help of file mKdir() method.

48) How Can I break String ?

Ans With the help of StringTokenizer.

49) What is printWriter class ?

Ans PrintWriter Class is Used to print the formatted String to text Output Stream.

50) What is InputStreamReader ?

Ans Is Used to Covert binary Stream into character Stream.

51) How Can I provide a directory listining & allows the User to navigate directories and Select a file

Ans With the help of file class and its list() meth

52) How Can you Read and Write to a text file?

Ans With the help of filereader and fileWritter.

53) Wlow Can you Read and Write binary file

Ans fileInputStream and fileOutputStream.

54) How Can you Read and Write primitive data?

Ans DataInputStream and DataOutputStream

55) How Can you Read and Write Java Object?

Ans ObjectInputStream and ObjectOutputStream.