

## OOP

Past paper 2020

Short Questions

① Write purpose of copy constructor,

Ans:- A copy constructor in a java class is the constructor that creates an object of same java class.

② How do you differentiate a class from an object.

Ans:- A class is a blueprint or template that defines the properties and behaviour of object

③ What is polymorphism?

Ans:- Polymorphism in java is the task that performs a single action in different way.

i-e.g think of super class called animal that has a method called animalSound().

④ Give example of exception handling?

Ans:- Example of exception

handling are try - catch etc

⑤ Give example of any overloaded operator of string class?

Ans<sub>5</sub> int a = 2 + 4;

String = "Hello" + "World";

⑥ Can sorting help in searching arrays' element?

Ans<sub>6</sub> Sorting an unsorted array helps to solve many problems such as searching for the minimum or maximum element.

⑦ What happen in case a user does not provide a constructor?

Ans<sub>7</sub> If we not provide constructor then java provides default constructor implementation for us to use.

⑧ Discuss the relative merits of using protected access vs using private access in base class

Ans<sub>8</sub> protected access enables the subclass to manipulate the protected members without using access method of superclass

Using private access can help you to faster access because of no synchronization.

Q) What is purpose of Information hiding?

Ans - Main purpose of information hiding is to limit the user's access to certain features to prevent changes.

Q) How do you mean by default member-wise assignment?

Ans - The assignment operator (=) can be used to assign an object to another object of same type.

Q) Dif b/w sequence container and associative containers?

Ans - A sequence container is a variable-sized. It includes arrays, vector and lists.

A Associative container is also variable-sized. It includes sets, multisets, maps etc.

Q) When we need to allocate memory dynamically?

Ans. Dynamic memory is allocated during the run time or execution time.

Static memory is allocated during compile time.

### Long Questions

Q2 (a) compare in detail

① Public access modifiers

If a class

member like variable, method

are prefixed with a public

access modifier, then they can

be accessed from anywhere

inside the program.

② Private access modifiers

If a class

member like variable, method

are in private access modifier

then they can be accessed

in its own class.

③ Protected access modifiers

This access

modifier is used to access

method, members of class with

same package as well as outside

the package but only through

## Inheritance.

(b) write a simple program that overloads the unary prefix and postfix ++ and -- operators.

Ans

```
class Counter {
```

```
    private int count;
```

```
    public Counter(int initialCount) {
```

```
        this.count = initialCount;
```

```
    public Counter inc() { return new Counter(++count); }
```

```
    public Counter dec() { return new Counter(--count); }
```

```
    public int getCount() { return count; }
```

```
public class Main {
```

```
    public static void main(String[] args)
```

```
{
```

```
    Counter myCounter = new Counter();
```

```
    S.O.P("++c" + ++myCounter.getCount());
```

```
    S.O.P("-c" + --myCounter.getCount());
```

```
    S.O.P("c++" + ++myCounter.getCount());
```

```
    S.O.P("c--" + myCounter.getCount());
```

```
}
```

```
}
```

Q) Advise a detail note on inheritance. Also clearly mention the relationship between base class and derived class.

Ans

### Inheritance

Inheritance is a mechanism that allows a class to inherit properties and behaviours from another class.

i.e. a car, a bus and a bicycle all fall under the umbrella term "Vehicle".

Relationship b/w base and derived class

#### Base Class

The class from which the subclass is derived is called a superclass also called base class.

#### Derived class

A class that inherits from base class is called derived class

(b) Dif b/w virtual function  
and pure virtual function.

Ans

### Virtual functions

A method used to override the behaviour of function in an inherited class with same signature to achieve the polymorphism.

### Pure Virtual functions

A pure virtual method is a virtual function that is required to be implemented by a derived class if derived class is not abstract.

### Past Paper 2021

#### Short Questions

① What are manipulators?

Ans: The most generic way of modifying your data and records in pipeline.

② what is friend function?  
Ans: A function that is given the same access as methods to private and protected data.

③ what is ternary operators.  
Ans: The conditional operator that takes three operands are called ternary operators.

i.e

```
{ int a=10, b=20, c;
```

```
if (a < b)
```

```
{ c=a;
```

```
}
```

```
else
```

```
{
```

```
c=b;
```

```
}
```

```
printf("%d", c);
```

```
}
```

④ What is diff b/w JDK and JRE?

Ans: JDK stands for Java development kit and used for development purpose.

JRE stands for java

Runtime environment. It is

a software that is required to run java program correctly.

⑥ If bw "this" and "super" keyword?  
Ans: super keyword is used to  
access methods of parent class.  
This keyword is used to  
access methods of current class.

⑦ Can java support multiple  
Inheritance? Justify your answer.

Ans: Java does not support  
multiple Inheritance.

⑧ What do you mean by checked  
exceptions?

Ans: Something that has gone  
wrong in your code and is  
potentially recoverable.

⑨ What is output?

class Test {

```
public static void main(String[] args)
{
    System.out.println(20+30 + "Javatpoint");
    System.out.println("Javatpoint" + 20+30);
}
```

Ans

Output

50  
Javatpoint

Past paper 2022

Short Questions

① what are different types of arguments?

Ans: 1) Primitive Type such

a) float, int, boolean etc.

2) Non-Primitive such as array, string etc.

② What is main diff b/w overloading and overriding?

Ans: Overloading occurs when

two or more methods in

same class have same method name but different parameters.

overriding occurs when two methods have same name and same parameters.

③ What is diff b/w multi and multi level inheritance?

Ans: Multiple Inheritance is

occur when a class inherit

from base class

multi-level inheritance

occur when a class inherit

from a derived class.

or base class for new

class.

④ Explain following line used under java program

public static void main (String args [ ])

Ans:

public static void main (String args [ ])   
 access modifier      Return type      method or function   
 name of Java & Argument

⑤ what is pure virtual functions?

Ans: A pure virtual function is a function that is required to implemented by derived

class if derived class is not abstract.

⑥ what is sealed modifiers?

Ans: The sealed modifier prevents other classes from Inheriting.

i-e.g. Class B inherits from Class A , but no class can inherit from class B.

⑦ what is d/lf blw throw & throws?

Ans: The "throws" keyword is used to declare which exception can be thrown from method.

The "throw" keyword is used to explicitly throw an exception within a method or block of code.

⑥ output finding

Ans B 50

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