WELLAND GOULDSMITH SCHOOL

CLASS-IX

COMPUTER APPLICATIONS

ANSWER KEY

WORKSHEET ANSWERS

1. The process by which one class acquires the properties (data members) and functionalities (methods) of another class is called **inheritance**. The aim of inheritance is to provide the reusability of code so that a class has to write only the unique features and rest of the common properties and functionalities can be extended from the another class. The class that inherits properties is called **derived class** and the class that gets inherited is called **Super class**.

Example: Automobile is a class which can be classified into car, bus, truck they inherit some characteristics from Automobile in addition to its own features.

2. Two object oriented language are –Python, Ruby

3. **import**-To include a package in a program in java the 'import' keyword is used. Here it is used to import the package java.io.

   *-It denotes that all classes of the java.io package will be included in the program.

4. **Function overloading**- It is a feature that allows us to have more than one function having same name but different parameter. For example to calculate the area of a circle, square, rectangle we use the functions area (radius), area (side), area (length, breadth) respectively. Thus to calculate the area of three different objects we have the same function name but different parameters.

Polymorphism allows function overloading in Java.

5. The advantages of encapsulation are the following:

- The source code of an object could be maintained independently.
- It can provide the programmer to hide the inner classes and the user to give access only to the desired codes. It allows the programmer to not allow the user to know how variables and data are stored.

6. a. The difference between machine level language and assembly level language are:-

MACHINE LANGUAGE	ASSEMBLY LANGUAGE
In machine language data only represented with the help of binary format (0s and 1s).	In assembly language data can be represented with the help of mnemonics such as Mov, Add, Sub, End etc.
Execution is fast in machine language because all data is already present in binary format	Execution is slow as compared to machine language.
There is no need of translator. The machine understandable form is the machine language.	Assembler is used as a translator to convert mnemonics into machine understandable form.
It is very difficult to learn as it is written in binary.	Easier than machine language and mnemonics are used.
Error correction and detection is difficult	Error correction and detection is easier.

b. The difference between Procedure oriented language and object oriented language:-

PROCEDURE ORIENTED LANGUAGE	OBJECT ORIENTED LANGUAGE
Program is divided into small chunks based on the functions.	Program is divided into objects depending on the problem.
Each function contains different data.	Each object controls its own data.
Operator overloading is not allowed.	Operator overloading is allowed.
No easy way for data hiding.	Data hiding is possible in OOP.
Operator overloading is not allowed.	Operator overloading is allowed.
Example:-C,BASIC	Example:-C++,Java

7. Base class and derived class- A **derived class** is a **class** created or **derived** from another existing **class**. The existing **class** from which the **derived class** is created through the process of inheritance is known as a **base class** or superclass.A **derived class** is also known as subclass or child **class**.

8. James Gosling developed Java. It was known as Oak initially.

9.

CLASS	OBJECT
A class is a template for creating objects in program.	The object is an instance of a class.
We can declare class only once.	We can create more than one object using a class.

10. Source code is a set of instructions written by the programmers to be executed by the compiler.

Java Source code changes into a **byte code** after it is compiled.

11. **Comments** are a way to write notes for the programmer or explanations for other programmers within the code. Comments are not executed by the compiler, it is used for programmer's reference.

12. Two features of Blue J are the following:-

- The compilation as well as the execution of the program is comparatively easier than JDK 1.5 or 1.6 platforms.
- It is a window-based platform where the user can perform the task more easily.

13. It is the statement which is used to get the output of a program or to display messages on screen.
Syntax :< Output statement><message or message with a variable>
Example, System.out.println("Hello world");

14. As machine language is written in 0's and 1's it requires no translation so it is faster than an assembly language.

15. public class Sum //Declaration of class
{
    public static void main()//main function
    {
        int a=45,b=90;//declaration of variables

```java
        int c=a+b;
        int d=b-a;
        int e=a*b;
        System.out.println("The sum is="+c);
        System.out.println("The difference is="+d);
        System.out.println("The product is is="+e);
    }
}
```