1.Area of a triangle program.

Solution

```
:import java.util.Scanner;
class triangle {
   public static void main(String args[]) {
      Scanner scanner = new Scanner(System.in);
      System.out.println("Enter the width of the Triangle:");
      double base = scanner.nextDouble();
      System.out.println("Enter the height of the Triangle:");
      double height = scanner.nextDouble();
      double area = (base* height)/2;
      System.out.println("Area of Triangle is: " + area);
   }
}
```

output:

```
Enter the width of the Triangle:
2
Enter the height of the Triangle:
2
Area of Triangle is: 2.0
```

2. Write a java program to check the given no is Armstrong or not(153 is Armstrong no 1*1*1+5*5*5+3*3*3=153)

Solution:

```
class ArmstrongExample{
  public static void main(String[] args)  {
    int c=0,a,temp;
    int n=153;
    temp=n;
    while(n>0)
    {
    a=n%10;
    n=n/10;
    c=c+(a*a*a);
    }
    if(temp==c)
    System.out.println("armstrong number");
    else
        System.out.println("Not armstrong number");
   }
}
```

Output:

```
armstrong number
```

3.Write a java program to check the given no is palindrome or not.

Solution:

```
class PalindromeExample{
 public static void main(String args[]){
  Scanner s=new Scanner(System.in);
  int r,sum=0,temp;
  int n=s.nextInt;
  temp=n;
  while(n>0){
   r=n%10;  //getting remainder
   sum=(sum*10)+r;
   n=n/10;
  }
  if(temp==sum)
   System.out.println("palindrome number ");
  else
   System.out.println("not palindrome");
}
}
```

Output:

```
545
Palindrome number
```

4. Write a java program to generate first N prime numbers

Solution:

```
class GFG
{
static void print_first_N_primes(int N)
{
        int i, j, flag;
        System.out.println("Prime numbers between 1 and + N + " are:");
        for (i = 1; i <= N; i++)
        {
                if (i == 1 || i == 0)
```

```
                continue;
        flag = 1;

        for (j = 2; j <= i / 2; ++j)
        {
                if (i % j == 0)
                {
                        flag = 0;
                        break;
                }
        }
        if (flag == 1)
                System.out.print(i + " ");
    }
}

public static void main (String[] args)
{
    int N = 100;
    print_first_N_primes(N);
}
}
```

Solution:

Prime numbers between 1 and 100 are:

2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59 61 67 71 73 79 83 89 97

5. Write a java program to print even numbers in between given two numbers.

Solution:

```
public class EvenNumbers {


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

```
            int k=2;
             int limit = 50;

             System.out.println("Printing Even numbers between "+k+" and " + limit);

             for(int i=k; i <= limit; i++){

                    if( i % 2 == 0){
                           System.out.print(i + " ");
                    }
             }
      }
}
```

Output:

2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50

1. What is Abstraction?

A. Abstraction is a process of hiding the implementation details and showing only functionality to the user.Another way, it shows only essential things to the user and hides the internal details, for example, sending SMS where you type the text and send the message. You don't know the internal processing about the message delivery.Abstraction lets you focus on what the object does instead of how it does it.

2.what is Encapsulation?

A. Encapsulation in Java is a mechanism of wrapping the data (variables) and code acting on the data (methods) together as a single unit. In encapsulation, the variables of a class will be hidden from other classes, and can be accessed only through the methods of their current class. Therefore, it is also known as data hiding.

To achieve encapsulation in Java.

Declare the variables of a class as private.

Provide public setter and getter methods to modify and view the variables values.

3.what is jdk?

JDK is an acronym for Java Development Kit. The Java Development Kit (JDK) is a software development environment which is used to develop java applications and applets. It physically exists. It contains JRE + development tools.

4.What is JVM?

JVM (Java Virtual Machine) is an abstract machine. It is a specification that provides runtime environment in which java bytecode can be executed.JVMs are available for many hardware and software platforms (i.e. JVM is platform dependent).

A specification where working of Java Virtual Machine is specified. But the implementation provider is independent to choose the algorithm. Its implementation has been provided by Oracle and other companies.

An implementation It's implementation is known as JRE (Java Runtime Environment).Runtime Instance Whenever you write the java command on the command prompt to run the java class, an instance of JVM is created.

5.What is Inheritance?

Inheritance is a mechanism in which one class acquires the property of another class. For example, a child inherits the traits of his/her parents. With inheritance, we can reuse the fields and methods of the existing class. Hence, inheritance facilitates Reusability and is an important concept of OOPs.

6.How java achieved platform independence?

The meaning of platform-independent is that the java compiled code(byte code) can run on all operating systems.

A program is written in a language that is a human-readable language. It may contain words, phrases, etc which the machine does not understand. For the source code to be understood by the machine, it needs to be in a language understood by machines, typically a machine-level language. So, here comes the role of a compiler. The compiler converts the high-level language (human language) into a format understood by the machines. Therefore, a compiler is a program that translates the source code for another program from a programming language into executable code.

This executable code may be a sequence of machine instructions that can be executed by the CPU directly, or it may be an intermediate representation that is

interpreted by a virtual machine. This intermediate representation in Java is the Java Byte Code.

7.. Write the syntax of main function

Public static void main(String[] args)

8.What is a Conditional operator?

The first expression must be a Boolean expression whereas expression1 and expression2 can be any expression that holds some value. Now, if the first operand evaluates to *true* then the conditional operator will return expression1 as the output, else expression2 will be returned.

9.How many data types in java?

The eight primitive data types are: byte, short, int, long, float, double, boolean, and char. The java.lang.String class represents character strings.

10. What is constant? How it is declared?

A *constant variable* or *constant* is a variable whose value never changes (which may seem strange given the meaning of the word *variable*). Constants are useful for defining shared values for all the methods of an object-for giving meaningful names to objectwise values that will never change. In Java, you can create constants only for instance or class variables, not for local variables.