1.

Develop a Java Program to create abstract class called Shape that contains two integers and an empty method name print area(). Provide three class named rectangle, Triangle such that each one of class extends class Shape. Each one of class contain only the method print area() that prints the area of given shape.

```
import java.util.Scanner;
import java.lang.Math;
abstract class Shape
{
int length, breadth;
Scanner SS = new Scanner(System.in);
abstract void printarea();
}
class rectangle extends Shape
{
void printarea(){
System.out.println("Enter length and breadth");
length = SS.nextInt(); breadth = SS.nextInt();
int Area = length * breadth;
System.out.println("the area of rectangle is :\n" + area);
}
}
class Triangle extends Shape
{
void printArea(){
System.out.println("Enter base length and height:");
length = SS.nextInt();
breadth = SS.nextInt();
int area = (length * breadth) / 2;
System.out.println("the area of Triangle is :\n" + area);
}
}
class Circle extends Shape
{
void printArea()
```

```
    }
    System.out.println("Enter the radius of circle : ");
    length = ss.nextInt();
    double area = main.PI * length * length;
    System.out.println("The area of circle is : " + area);
  }
}
class B_main
public static void main(String args[])
{
  int ch;
  Scanner Scan = new Scanner(System.in);
  System.out.println("\n MENU \n" "Select Shape \n 1. Rectangle
    \n 2. Triangle \n 3. Circle\n");
  ch = Scan.nextInt();
  Switch (ch)
  Case 1 : Rectangle R1 = new Rectangle();
           R1.PrintArea();
           break;
  Case 2: Triangle t1 = new Triangle();
          t1.PrintArea();
          break;
  Case 3: Circle C1 = new Circle();
          C1.PrintArea();
          break;
  default System.out.println("Invalid Input Try
  }
}
}
```

Output :-

1) Menu
2) Select Shape
   1) Rectangle
   2) Triangle
   3) Circle

Enter length and breadth
10 20
The area of Rectangle is : 200

MENU
Select Shape
1) Rectangle
2) Triangle
3) Circle

2
Enter base length and height
10 20
The area of Triangle is : 100

```
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Users\hp>cd C:\Users\hp\OneDrive\Desktop\1bm21cs056

Users\hp\OneDrive\Desktop\1bm21cs056>javac main.java

Users\hp\OneDrive\Desktop\1bm21cs056>java main
er height and width of rectangle


a of Rectangle is 200
er height and base of triangle


a of Triangle is 600.0
er radius of Circle

a of Circle is 7850.0

Users\hp\OneDrive\Desktop\1bm21cs056>
```