1) The output of the program is :-

abcd abc false

abcd abcd true

Explanation :- In this program, s1 = “abc” and s2 = “abc” now, (s1+= “d”) will create a new object and add “d” to the last of the string. So, new object s1 has a value “abcd”. So, the print statement will print the output as (abcd abc false).

Now, an object of stringBuffer class is created as sb1 which has value “abc”. Another object of StringBuffer sb2 is created as sb2 which has value of sb1 which is “abc”. Now, (sb1.append(“d”) will not create new object, it will modify the original string and the value of sb1 becomes “abcd”. Now, the print statement will print the output as (abcd abcd true)

2) In this program, inside public class Main a static method void FlipRobo is created which takes string as input. This method will print the statement “ string “. Another method void FlipRobo is created which takes object as an input.

Inside the main method, the method FlipRobo method is called with Null value as parameter inside it. It will call the FlipRobo method and will print the statement “String ”

3) Output of the program : a

b

c

In this program, class first is the superclass and class second inherits class first and class third inherits class second. In the main method the object of class third is created. Since , no method is called in the main method, the program will execute from the superclass and print the output as (a b c).

4) In the public class Calculator, a variable int num is initialized to 100. Method void calc (int num) takes int as input which is stored in num. The Method void printNum() will print the value of num.

In the main method object of class Calculator is created and method calc is called using the obj.cal(2). It will run the method calc and the input passed is 2 so, num will be 2*10 = 20. Since the value is not passed and input parameter is not defined in the printNum() method, it will not print the value of num.

5) In the public class Test, inside the main method new object of String Builder (s1) is created and string "java " is passed as input for the object.

Another object s2 is created and String "Love" is assigned to s2. Now, s1.append(s2) will provide the output : "JavaLove" . now, s1.substring(4) will give "Love". Now, the s1.indexof(s2) will be stored in foundAt . now, the print statement will print 4.

6) Author a = new Programmer will create a new object "a" which has Author class as parent class for Programmer class, here The Programmer class inherits the methods of the Author class. When a.write() method is called, it will execute the method In the Author class and print the statement "Writing book".

7) Th output of the program is : Not equal. This is because whenever In java we create an object with new keyword a new object is created and when we create a new object with the new keyword with the same value again a new object will be created and new value will be stored inside the new variable.

8) In this program, Try-catch block is used to handle the arithmetic –Exception. Inside the try block Int num = 45/3 is executed and will print the value of num.

Inside the catch block the Exception is defined (Exception e). When the main method is called, it will first execute the code inside the try block and since there is no error in the code, the value of num will be 15. Since, there is no exception detected in the try block, the catch block will not execute and the finally block will be executed and will print the output as :

First statement of try block
15
finally block
Main method

9) In this program, Inside the class FlipRobo a constructor FlipRobo is created and inside the constructor there is a print statement. Inside class FlipRobo the constructor FlipRobo() is called using the instance of an object which is defined as static and the variable is “a”. Now, when the main method is executed first static FlipRobo a = new FlipRobo(); will get executed and “Constructor called ” will be printed. In the main method again a new instance of the variable is created with variable b and the constructor FlipRobo() will be invoked and the “Constructor called” will be printed.

10) In this program, When the class is loaded the Static block gets executed automatically . hence when the program is executed, it will first execute the static blocks and it will print : (Static Block 1 Static Block 2) .

In the main method an object of FlipRobo class is created and the print statement will print (“Value of num = “ + a.num) here the output will be “ Value of num = 100” and for the second statement “Value of mystr = Constructor”.