Table of Contents

[I. Topic: Variable Declaration/ Assignment: 2](#_Toc527556015)

[II. Topic: String Methods: 3](#_Toc527556016)

[III. Topic: Condition statement: 5](#_Toc527556017)

[IV. Topic: Loops (for/ while/ do while): 6](#_Toc527556018)

[V. Topic: Array 1D 7](#_Toc527556019)

[VI. Topic: Array 2D 8](#_Toc527556020)

[VII. Topic: Methods: 9](#_Toc527556021)

[VIII. Topic: Scope: 10](#_Toc527556022)

[IX. Topic: Class: 11](#_Toc527556023)

[X. Topic: Class Object: 12](#_Toc527556024)

[XI. Topic: Inheritant: 13](#_Toc527556025)

[XI. Topic: Polymorphism – Type Conformance: 14](#_Toc527556026)

[X. Topic: Polymorphism - subtype: 15](#_Toc527556027)

[X. Topic: Mixtype: 16](#_Toc527556028)

[XII. Topic: Using of “This”: 17](#_Toc527556029)

[XIII. Topic: Abstract Class: 17](#_Toc527556030)

[XIV. Topic: Interface: 18](#_Toc527556031)

[XV. Topic: Math Library: 20](#_Toc527556032)

# I. Topic: Variable Declaration/ Assignment:

**1. Question Type: Fill in the blank:**

* + Example:
    1. \_\_\_\_\_\_ str = “Hello World”;
    2. \_\_\_\_\_\_ num = 1;
    3. \_\_\_\_\_\_ y;

y = 4.1;

**2. Question Type: Write code**

* + Example:
    1. Declare variable type String; variable name “input”;
    2. Declare variable type String; variable name “bob”; then in next statement, assign bob with value “BoB”.
    3. Declare variable type int; variable name “num” and in the same statement, assign num with value 10.

**3. Question Type: Short answer**

* + 1. What is the value of c at the end of the code?

String a = "hello";

String b = "goodbye";

String c = a;

c = "good morning";

* + 1. What are the values of the variables num1 and num2 after the following code runs?

int num1 = 7;

int num2 = 9;

num2 = num1;

num1 = 5;

* + 1. For each of the following, give the value of the assigned variable. If the line of code produces an error, simply write ERROR.
       1. int xa=7 / 2 \* 5 - 1;
       2. int xb=7 / 2 \* (5 - 1);
       3. int xc=7 / (2 \* 5 - 1);
       4. int xd = 7 / 2.0 \* 5 - 1;
       5. double xe = 7 / 2.0 \* 5 - 1;
       6. double xf = 7 / 2 \* 5 - 1;

**4. Question Type: Find Error/ Fix Error**

* + 1. Fix the error in this code:

String input == "test";

* + 1. Fix the error in this code:

int num = 1.3;

* + 1. Does this code have any error?

int p = 5;

String str = “I have “ + p + “ apple and “ + 4 + “ banana”;

**5. Question Type: Specify output**

* + 1. N/A

# II. Topic: String Methods:

**1. Question Type: Fill in the blank:**

* + Example:
    1. Fill in the blank that temp2 store value “end of”.

String temp = “To the end of this line”;

String temp2 = temp.\_\_\_\_\_\_;

* + 1. Fill in the blank that variable length store the length of String temp.

String temp = “To the end of this line”;

String length = temp.\_\_\_\_\_;

* + 1. Fill in the blank that result store “hello world”.

String first = “hello”;

String second = “ world”;

String result = first.\_\_\_\_(second);

**2. Question Type: Write code**

* + Example:
    1. String test = "hello world”;

Write a program that count the number of letter "l" in String test.

* + 1. String test = “toUpperCase";

Write a program that turn the string test to all upper case.

* + 1. String test = “To the end of this line”;

Write two statement, using 2 different methods of string to capture “end of this line”.

**3. Question Type: Short answer**

* + Example:
    1. Which method to use when comparing 2 String?
    2. What is the different between method subString(int a, int b) vs subString(int a)?
    3. What will be output of this program?

String a = “hello world”;

a.replaceAll(“l”, “k”);

System.out.println(a);

**4. Question Type: Find Error/ Fix Error**

* + Example:
    1. N/A

**5. Question Type: Specify output**

* + Example:
    1. Specify output of this program?

String test = “hello world”;

System.out.println(test.subString(4));

* + 1. Specify output of this program?

String test = “test String method”;

System.out.println( test.charAt(5) + test.subString(3,7).toUpperCase() );

* + 1. Specify output of this program?

String test = “test String method”;

System.out.println( test.indexOf(“e”) + test.concat( test.charAt(2) ) );

# III. Topic: Condition statement:

**1. Question Type: Fill in the blank:**

* + Example:
    1. N/A

**2. Question Type: Write code**

* + Example:
    1. Write a code with condition relate to variable 'condition' type int that: if 'condition' < 10 then print out "one digit number", if 'condition' < 100 then print out "two digit number", else print out "more than two digit number.
    2. Write a code with condition relate to variable 'strCondition' type String and ‘intCondition’ type int that: if strCondition is the same as String “hello” and intCondition < strCondition length, then print out “Test”.
    3. Write a code with condition relate to variable ‘strCondition’ type String that: if the subString from index 4 of strCondition has the length of 5 or index of first char ‘l’ in strCondition is 3, then print out “test”.

**3. Question Type: Short answer**

* + Example:
    1. N/A

**4. Question Type: Find Error/ Fix Error**

* + Example:
    1. N/A

**5. Question Type: Specify output**

* + Example:
    1. N/A

# IV. Topic: Loops (for/ while/ do while):

**1. Question Type: Fill in the blank:**

* + Example: (We can check this by check the terminate time of the program.)
    1. Fill in the blank to make a valid while loop and the loop is not infinite loop

int n = 1;

while ( n < 10){

System.out.println(n);

\_\_\_\_\_\_ ;

}

* + 1. Fill in the blank to make a valid for loop and the loop is not infinite loop

for ( int \_\_\_ = 0; n < 10 ; \_\_\_\_) {

}

* + 1. Fill in the blank to make a valid do while loop

int n = 0;

do{

System.out.println(n);

\_\_\_\_\_\_;

}\_\_\_\_ ( n < 10);

**2. Question Type: Write code**

* + Example:
    1. Write a while loop to print out number from 1 to 10.
    2. Write a code that go through String ‘strTest’ and check how many char ‘a’ in the String.
    3. Write a loop that calculate the factorial of 10.

**3. Question Type: Short answer**

* + Example:
    1. Give a while loops with several condition that can terminate the loop> How many time this loop run?
    2. var i = 0;

while (i < 3) {

println("hi");

i++;

}

What does the code output?

* + 1. String a = “Only print even char”;

for( int i = 0; i < a.length; i++){

if ( i % 2 == 0){

S.o.p(a.charAt(i) );

}

}

What is the code output;

**4. Question Type: Find Error/ Fix Error**

* + Example:
    1. N/A

**5. Question Type: Specify output**

* + Example:
    1. N/A

# V. Topic: Array 1D

**1. Question Type: Fill in the blank:**

* + Example:
    1. Fill in the blank to have valid code

\_\_\_\_\_ array = new String[10];

* + 1. Fill in the blank to have valid code

int[] array;

array = new \_\_\_\_\_[10];

* + 1. Fill in the blank to have valid code

\_\_\_\_\_ array = new int[10];

**2. Question Type: Write code**

* + Example:
    1. Declare and initiate an 1D Array of Type String, name inputs, length 10
    2. Declare and initiate an 1D array of Type int, name array; then in separate statement, initiate the array with length 10
    3. Given a string array name strArray with length 10, write a loop to go through the array and print out the String that have length > than 5.

**3. Question Type: Short answer**

* + Example:
    1. N/A

**4. Question Type: Find Error/ Fix Error**

* + Example:
    1. Find error in this code:

String[] type = new String[5];

type[5] = "five";

* + 1. Find error in this code:

String[] test = new String[5];

test[2] = 5;

* + 1. Find error in this code:

int[] value;

value[2] = 5;

**5. Question Type: Specify output**

* + Example:
    1. N/A

# VI. Topic: Array 2D

**1. Question Type: Fill in the blank:**

* + Example:
    1. Fill in the blank to have valid code

\_\_\_\_\_ array = new String[10][10];

* + 1. Fill in the blank to have valid code

int[][] array;

array = new \_\_\_\_\_[10][10];

* + 1. Fill in the blank to have valid code

\_\_\_\_\_ array = new int[10][10];

**2. Question Type: Write code**

* + Example:
    1. Declare and initiate an 2D Array of Type String, name inputs, length 10x10
    2. Declare and initiate an 1D array of Type int, name array; then in separate statement, initiate the array with length 10x10
    3. Given a string array name strArray with length 10x10, write a loop to go through the array and print out the String that have length > than 5.

**3. Question Type: Short answer**

* + Example:
    1. N/A

**4. Question Type: Find Error/ Fix Error**

* + Example:
    1. N/A

**5. Question Type: Specify output**

* + Example:
    1. N/A

# VII. Topic: Methods:

**1. Question Type: Fill in the blank:**

* + Example:
    1. N/A

**2. Question Type: Write code**

* + Example:
    1. Write a method that return String, name getName, take 2 parameter: int firstParam and String inputString
    2. Write a void method, name setName, take 1 paramenter: String stringInput
    3. Write a non-void method, name getParam, take 2 parameter: String inputString,

Double inputDou, int inputInt.

**3. Question Type: Short answer**

* + Example:
    1. N/A

**4. Question Type: Find Error/ Fix Error**

* + Example:
    1. Find error in this code

private void helper(){

// dosthing

return “”;

}

* + 1. Find error in this code

private String helper(String a){

//dost

}

* + 1. Find error in this code

public String helper(String a){

int b = 10;

return b;

}

**5. Question Type: Specify output**

* + Example:
    1. N/A

# VIII. Topic: Scope:

**1. Question Type: Fill in the blank:**

* + Example:
    1. N/A

**2. Question Type: Write code**

* + Example:
    1. N/A

**3. Question Type: Short answer**

* + Example:
    1. N/A

**4. Question Type: Find Error/ Fix Error**

* + Example:
    1. Find error in this code and fix it;

private int helper(){

if(...){

int a = 1;

}

return a;

}

**5. Question Type: Specify output**

* + Example:
    1. N/A

# IX. Topic: Class:

**1. Question Type: Fill in the blank:**

* + Example:
    1. N/A

**2. Question Type: Write code**

* + Example:
    1. <Given Class diagram>

Base on the given class diagram, give the code for this class (Just need methods' signature and attributes)

**3. Question Type: Short answer**

* + Example:
    1. Method signature consists of

a. The signature of a method is the name of the method the type of its return value.

**b.** The signature of a method is the name of the method and the names of its parameters.

**c.** The signature of a method is the name of the method and the data types of its parameters.

**d.** The signature of a method is the name of the method, its parameter list, and its return type.

* + 1. Which of the following is a method having same name as that of it’s class?  
       a) finalize  
       b) delete  
       c) class  
       d) constructor
    2. What is the return type of a method that does not returns any value?  
       a) int  
       b) float  
       c) void  
       d) double

**4. Question Type: Find Error/ Fix Error**

* + Example:
    1. N/A

**5. Question Type: Specify output**

* + Example:
    1. N/A

# X. Topic: Class Object:

**1. Question Type: Fill in the blank:**

* + Example:
    1. N/A

**2. Question Type: Write code**

* + Example:
    1. N/A

**3. Question Type: Short answer**

* + Example:
    1. Student Bob  = new Student("Bob");

Student Ann  = new Student("Ann");

Student Ted = Bob;

How many Object is created? What happen if we have a code: Ted.changeName("Ted");

**4. Question Type: Find Error/ Fix Error**

* + Example:
    1. N/A

**5. Question Type: Specify output**

* + Example:
    1. N/A

# XI. Topic: Inheritant:

**1. Question Type: Fill in the blank:**

* + Example:
    1. N/A

**2. Question Type: Write code**

* + Example:
    1. N/A

**3. Question Type: Short answer**

* + Example:
    1. Can a class extend itself?
    2. Private members of a class are inherited to sub class. True or false?
    3. How do you prevent a field or a method of any class from inheriting to sub classes?

**4. Question Type: Find Error/ Fix Error**

* + Example:
    1. Specify error in this program

public class X {

//Class X Members

}

public class Y {

 //Class Y Members

}

public class Z extends X, Y {

//Class Z Members

}

* + 1. Specify error in this code

public class X{

private void methodOfX(){

System.out.println("Class X");

}

}

public class Y extends X{

@Override

private int methodOfX(){

System.out.println("Class X");

}

}

**5. Question Type: Specify output**

* + Example:
    1. Specify output of this program

public class A {

int i = 10;

}

public class B extends A {

int i = 20;

}

public class MainClass {

public static void main(String[] args)    {

A a = new B();

System.out.println(a.i);

}

}

# XI. Topic: Polymorphism – Type Conformance:

**1. Question Type: Fill in the blank:**

* + Example:
    1. Fill in the blank to have valid program

\_\_\_\_\_\_\_\_\_ card; card = new Valentine( "Joe", 14 ) ;

card.greeting();

card = new Holiday( "Bob" ) ;

card.greeting();

card = new Birthday( "Emily", 12 ) ;

card.greeting();

**2. Question Type: Write code**

* + Example:
    1. N/A

**3. Question Type: Short answer**

* + Example:
    1. N/A

**4. Question Type: Find Error/ Fix Error**

* + Example:
    1. N/A

**5. Question Type: Specify output**

* + Example:

# X. Topic: Polymorphism - subtype:

**1. Question Type: Fill in the blank:**

* + Example:
    1. N/A

**2. Question Type: Write code**

* + Example:
    1. N/A

**3. Question Type: Short answer**

* + Example:
    1. Constructor overloading is also one form of the polymorphism. Yes or No?

**4. Question Type: Find Error/ Fix Error**

* + Example:
    1. N/A

**5. Question Type: Specify output**

* + Example:
    1. Specify output of this program

public class A {

protected void getData() {

System.out.println("Inside A");

}

}

public class B extends A {

protected void getData() {

System.out.println("Inside B");

}

}

public class Test {

public static void main(String[] args) {

A obj = new B();

obj.getData();

}

}

# X. Topic: Mixtype:

**1. Question Type: Fill in the blank:**

* + Example:
    1. Specify value of the variable after the statement is executed:

1. String x = "num = " + s; \_\_\_\_\_\_\_\_\_\_

String s = "num = "; \_\_\_\_\_\_\_\_\_\_

2. String s = "num = ";     \_\_\_\_\_\_\_\_\_\_

String x = s + 9 + 2; \_\_\_\_\_\_\_\_\_\_

3. int xb=7/2 \*(5-1); \_\_\_\_\_\_\_\_\_\_

4. double xe = 7 / 2.0 \* 5 - 1; \_\_\_\_\_\_\_\_\_\_

**2. Question Type: Write code**

* + Example:
    1. N/A

**3. Question Type: Short answer**

* + Example:
    1. N/A

**4. Question Type: Find Error/ Fix Error**

* + Example:
    1. Specify error in this code:

double a = 5.5;

int b = a / 2;

**5. Question Type: Specify output**

* + Example:
    1. N/A

# XII. Topic: Using of “This”:

**1. Question Type: Fill in the blank:**

* + Example:
    1. N/A

**2. Question Type: Write code**

* + Example:
    1. N/A

**3. Question Type: Short answer**

* + Example:
    1. You know that compiler will keep super() calling statement implicitly as a first statement in every constructor. What happens if we write this() as a first statement in our constructor?

**4. Question Type: Find Error/ Fix Error**

* + Example:
    1. N/A

**5. Question Type: Specify output**

* + Example:
    1. N/A

# XIII. Topic: Abstract Class:

**1. Question Type: Fill in the blank:**

* + Example:
    1. N/A

**2. Question Type: Write code**

* + Example:
    1. Write a code which implements abstract method “methodY()” of class Y in the below code?

class X {

abstract static class Y    {

abstract void methodY();

}

}

**3. Question Type: Short answer**

* + Example:
    1. One class has a method with two overloaded forms. One form is abstract and another one is concrete. Is it possible in java?
    2. Can we write explicit constructors in an abstract class?

**4. Question Type: Find Error/ Fix Error**

* + Example:
    1. Specify error in this code

public abstract class AbstractClass {

private abstract void abstractMethod()    {

System.out.println("First Method");

}

}

**5. Question Type: Specify output**

* + Example:
    1. N/A

# XIV. Topic: Interface:

**1. Question Type: Fill in the blank:**

* + Example:
    1. Fill in the blank to have valid code

public interface X {

void methodX();

}

public class Y \_\_\_\_\_\_\_ X {

void \_\_\_\_\_{

// Something

}

}

**2. Question Type: Write code**

* + Example:
    1. N/A

**3. Question Type: Short answer**

* + Example:
    1. Can we declare protected methods in an interface?
    2. Can a class implement more than one interfaces?
    3. Can interfaces have constructors?

**4. Question Type: Find Error/ Fix Error**

* + Example:
    1. Specify error in this program

public interface X {

public void methodX();

}

public class Y implements X {

public void methodX()    {

System.out.println("Method X");

}

}

**5. Question Type: Specify output**

* + Example:
    1. Specify output of this program

public interface A{

public void myMethod();

}

public class B{

public void myMethod(){

System.out.println("My Method");

}

}

public class C extends B implements A{ }

public class MainClass{

public static void main(String[] args) {

A a = new C();

a.myMethod();

}

}

# XV. Topic: Math Library:

**1. Question Type: Fill in the blank:**

* + Example:
    1. Fill in the blank so that variable x is the bigger value among variable a and b.

int x = Math.\_\_\_\_\_ (a , b);

* + 1. Fill in the blank so that variable x is equal a raise by b.

int x = Math.\_\_\_\_\_ (a, b);

**2. Question Type: Write code**

* + Example:
    1. Write a program that get a random value and save it to variable “ran”.
    2. Write a program that get the absolute value of the input.

**3. Question Type: Short answer**

* + Example:
    1. N/A

**4. Question Type: Find Error/ Fix Error**

* + Example:
    1. Find the error in this statement.

int i = Math.random();

**5. Question Type: Specify output**

* + Example:
    1. N/A