EDUCATION

Professional Tecnology Education

IT

1. **Which one is false about method creation in Java?**

A) Method names should start with lowercase.

B) Every method must have a return type.

C) After every method name we must use ()

D) The part starts with "{" and ends with "}" is called method structure

2.

1) Return Type
2) Access Modifier
3) Method Parenthesis
4) Curly braces
5) Method Name

Put the given ones in order to create a method.

A) 2 - 1 - 5 - 3 - 4

B) 2 - 5 - 1 - 3 - 4

C) 1 - 2 - 5 - 3 - 4

D) 2 - 1 - 5 - 4 - 3

3. **..... means taking the programmer-readable text in your program file and converting it to binary codes.**

Fill in the blank.

A) Compile

B) public

C) Access Modifier

D) JDK

4. **Which syntax is true for the main method in Java?**

A) public static void main(String[ ] args) {
}

B) public void static main(String[ ] args) {
}

C) static public void main(String[ ] args) {
}

D) public static void main[String( ) args] {
}

5. **Which ones are true?**

A) A bit is the smallest unit of data in a computer.

B) A bit has a single binary value, either 0 or 1.

C) 8 bits are called 1 byte

D) Data is information processed or stored in a computer.

6. **Which one is false to create a class?**

A) Class names start with uppercase

B) Space character can be used in a class name

C) Class body contains variables and methods

D) If you use multiple words in a class name, every word should start with uppercase

7. **Which ones are true?**

A) "public" access modifier makes the method accessible from anywhere in the project.

B) "private" access modifier makes the method accessible from just a single class

C) "default" access modifier makes the method accessible from a group of a class

D) "protected" access modifier makes the method accessible from a group of a class and the child classes of the class

8. **Which ones are false?**

A) 3 + 5 = 8
The addition operation returns 8

B) 3 + 5 = 8
The return type of the addition operation is integer

C) If you create a method to click on a button, you should not type anything for the return type in method creation

D) Every method returns data

9. **Which one is false?**

A) We need class to create an object

B) Object has everything which class has

C) If a class has variable x, and method y then object created from the class will have the variable x, and method y.

D) None

10. **AceBadR**

Put the following characters in ascending order according to Java rules

A) ABRacde

B) AaBcdeR

C) AacdeBR

D) acdeABR

11. **Which one is true to declare a variable and assign a value to the variable?**

A) int x = 12;

B) int x : 12;

C) 12 = int x;

D) 12 : int x;

12.

1) Variable Name
2) Value
3) Data Type
4) Equal Sign
5) Semicolon

Put the given ones in order to create a variable and assign value to the variable?

A) 3 - 1 - 4 - 2 - 5
B) 3 - 4 - 1 - 2 - 5
C) 3 - 1 - 2 - 4 - 5
D) 1 - 3 - 4 - 2 - 5

13. Which option displays all primitive data types?

A) boolean, char, byte, short, int, long, float, double
B) boolean, char, byte, short, int, long, float, double, string
C) byte, short, int, long, float, double
D) char, byte, short, int, long, float, double, string

14. Which one is true?

A) char letter = "a" ;
B) byte number = 12543;
C) boolean isExpensive = 'true';
D) float num = 1.2;
E) String str = "false";

15. Which one is false?

A) byte data type is the best for the age of elementary school students.
B) char data type can be used just for single characters like A, n, ?, 2, etc.
C) int data type can be used for the number of cells in a human body
D) float or double can be used for the price of any product

16. **Which one is false?**

A) long a = 1234;

B) long a = 1234L;

C) long a = 8234567890;

D) long a = 8234567890L;

17.
```
public class Test {
    public static void main(String[] args) {
        calculatePercentage(200, 30);
    }
    public static double calculatePercentage(double n, double p){
        return (n*p)/100;
    }
}
```

What is the output?

A) 60

B) 60.0

C) 6000

D) 6000.0

18.
```
public class Test {
    public static void main(String[] args) {
        printAge(23);
    }
    public static void printAge(int age){
        System.out.println(age);
    }
}
```

Which one is true for the given code?

A) If you run the code, it prints 23 on the console

B) Return type of the printAge() method must be int

C) printAge(23) must be put inside the System.out.println(); parenthesis to be able to see the output on the console

D) None

19.

```
public class Test {
    public static void main(String[] args) {
        int age = 12;
        System.out.println(age);
        System.out.println(numOfStudents);
    }
    int numOfStudents = 342;
}
```

Which ones are true for the given code?

A) If you run the code, it prints 12 and 342 on the console.

B) There is an error on the code

C) You need to make age variable static

D) You need to make numOfStudents variable static

20.

```
public class Test {
    public static void main(String[] args) {
        double priceOfNotebook = 12;
        double priceOfBook = 23;
        System.out.println(priceOfNotebook + priceOfBook);
    }
}
```

What is the output?

A) 35

B) 35.0

C) 1223

D) 1223.0

1. Which one is not the difference between "primitive" and "non-primitive" data types?

A) Primitives contain just values, non-primitives contain values and methods inside the container.

B) Primitives start with upper case, non-primitives start with lower case.

C) Primitives are created by Java, we cannot create primitive data types.Non-primitives can be created by programmer, java created some as String.

D) The size of primitive types depends on the data type, non-primitives types all have the same size.

2. Which ones are non-primitive data types?

A) Data 1 and Data 3

B) Data 1 and Data 4

C) Data 2 and Data 4

D) Data 1, Data 3, Data 4

3. Which one is false?

A) There are two different memories, they are Stack and Heap

B) Stack is small and it stores primitives and references.

C) Heap is large and it stores non-primitives and objects.

D) None

4. Which ones are false?

A) byte num1 = 33;
int num2 = num1;
System.out.println(num2);
This is Auto Widening Casting and prints 33 to the console

B) long num1 = 120;
short num2 = (short)num1;
System.out.println(num2);
This is Explicit Narrowing Casting and prints 120 to the console.

C) float num1 = 12.5;
int num2 = (int)num1;
System.out.println(num2);
This is Explicit Narrowing Casting and prints 12 to the console.

D) double num1 = 28.75;
int num2 = (int)num1;
System.out.println(num2);
This is Explicit Narrowing Casting and prints 29 to the console.

5. Which one is false?

A) int a = 12;
Integer b = a;
This is Auto-Boxing

B) Byte a = 12;
byte b = a;
This is Un-Boxing

C) short s = 13;
Short t = s;
s is stored in Stack and t is stored in Heap memory

D) long m = 23;
The reference of m is stored in Stack memory

6. **Which code creates an object from MyClass class?**

A) MyClass obj = new MyClass();

B) MyClass() obj = new MyClass;

C) MyClass obj = new MyClass;

D) MyClass() obj = new MyClass();

7. **MyClass obj = new MyClass();**

Which ones are true for the given code?

A) MyClass is class name

B) obj is object name

C) MyClass() is constructor

D) new is a keyword to create an object from scratch

8.
```
public class Test {
    int a = 12;
    public static void main(String[] args) {
        Test obj = new Test();
        System.out.println(obj.convert(20) + obj.a);
    }
    public double convert(double mile){
        return mile*1.6;
    }
}
```

What is the output?

A) 44

B) 32.0

C) 12

D) 44.0

9.
```
public class Test {
    public static void main(String[] args) {
        Test obj = new Test();
        System.out.println(obj.myMethod('A', 'b'));
    }
    public int myMethod(char c1, char c2){
        return c1 + c2;
    }
}
```

Note: ASCII value of 'A' is 65 and ASCII value of 'b' is 98

What is the output?

A) 163
B) Ab
C) bA
D) Gives error

10. **String s = "Tom Hanks";**

Which one is <u>false</u> for the String s?

A) System.out.println(s.toUpperCase());
Prints TOM HANKS o12n the console

B) System.out.println(s.toLowerCase());
Prints tom hanks on the console

C) System.out.println(s.contains("m"));
Prints true on the console

D) System.out.println(s.equals("tom hanks"));
Prints true on the console

1. Which code creates variables displayed on the image?

A)
```
int age = 27;
char initial = 'A';
```

B)
```
int age = 27, initial = 'A';
```

C)
```
int age = 27;
String initial = "A";
```

D)
```
int age = "27";
char initial = 'A';
```

2. Which one of the following is true to get data from the user?

A)
```
Scanner scan = new Scanner(System.in);
System.out.println("Please, give me an integer");
int num1 = scan.nextInt();
```

B)
```
Scanner scan = new Scanner(System.out);
System.out.println("Please, give me an integer");
int num1 = scan.nextInt();
```

C)
```
Scanner scan = new Scanner(System.in);
System.out.println("Please, give me an integer");
int num1 = scan.next();
```

D)
```
Scanner scan = new Scanner(System.in);
System.in.println("Please, give me an integer");
int num1 = scan.nextInt();
```

3. **int num = 11;**

Which one is false?

A) num = num - 2;
num+=3;
num++;
System.out.println(num);
prints 13 to the console.

B) num = num + 2;
num--;
num--;
System.out.println(num);
prints 11 to the console.

C) num+=3;
num+=2;
num--;
System.out.println(num);
prints 15 to the console.

D) None

4. int a = 12;
int b = 15;
a*=2;
b/=3;
System.out.println(a+b);

What is the output?

A) 24
B) 27
C) 29
D) 3

5. **Which ones print false on the console?**

A) System.out.println(2!=3 && 4>=4);

B) System.out.println('A'>'a' && 'c'<'f');

C) System.out.println('A'>23 && 'A'<'z');

D) System.out.println(4>3 && 2!=3 && 5>=7);

6. **Which one prints true on the console?**

A) System.out.println(2!=3 || 4>=4);

B) System.out.println('A'>'a' || 'c'<'f');

C) System.out.println('A'>23 || 'A'<'z');

D) System.out.println(4<3 || 2==3 || 5>=7);

7. int result = 2+3*(12 - 4/2)/15 - 3;
System.out.println(result);

What is the output?

A) 1

B) 2

C) 3

D) 4

8. **Which one is true?**

A) System.out.println(5/2);
Prints 2.5 on the console

B) System.out.println(5/2.0);
Prints 2.5 on the console

C) double result = 12/3 + 1;
System.out.println(result);
Prints 5 on the console

D) int result = 10/2.5 + 1;
System.out.println(result);
Prints 5 on the console

9.
```
public class Test {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        System.out.println("Enter date of birth to calculate age");
        int dob = input.nextInt();

        int age = calculateAge(dob);
        System.out.println(age);
    }
    public static int calculateAge(int dateOfBirth){
        return LocalDate.now().getYear() - dateOfBirth;
    }
}
```

Which ones are false for the given code?

A) To be able to use calculateAge() method, an object must be created. Object was not created on the given code therefore, it gives error

B) The code takes the date of birth from user and calculates the age

C) If user enters 2000 and the current year is 2022 then code prints 22 on the console.

D) There is an error in the code typed to get data from user

10.
```
public class Test {
    static int age = 12;
    char initial = 'J';
    public static void main(String[] args) {
        System.out.println(age + initial);
    }
}
```

Which ones are true for the given code?

A) Access modifiers of age and initial variables are default

B) The code gives error

C) If the code does not give error, the output will be an integer

D) To be able to use initial variable inside the main method, an object must be created

1.

```
if(gender.equals("male")) {
    if(age<20) {
        System.out.println("Boy");
    }else {
        System.out.println("Man");
    }
}else if(gender.equals("female")) {
    if(age<20) {
        System.out.println("Girl");
    }else {
        System.out.println("Woman");
    }
}else {
        System.out.println("There is no any definition for other genders");
    }
```

Which one is true for the given code snippet?

A) If the gender is MALE and the age is 30 the output will be Man

B) If the gender is female and the age is 20 the output will be Girl

C) If the gender is Female and the age is 13 the output will be There is no any definition for other genders

D) If the gender is FEMALE and the age is 30 the output will be Woman

2.
```
if(quantity>1000) {
    if(unitPrice>30) {
        System.out.println("10% Discount");
    }else {
        System.out.println("5% Discount");
    }
}else{
    if(unitPrice>100) {
        System.out.println("4% Discount");
    }else {
        System.out.println("No Discount");
    }
}
```

Which ones are false for the given code snippet?

A) If the quantity is 900 and unitPrice is 100 the output will be No Discount

B) If the quantity is 1000 and unitPrice is 120 the output will be 4% Discount

C) If the quantity is 1200 and unitPrice is 30 the output will be 10% Discount

D) If the quantity is 1100 and unitPrice is 40 the output will be 5% Discount

3.
```
Scanner scan = new Scanner(System.in);
System.out.println("Enter your name");
String day = scan.next();

char ch1 = day.charAt(1);
char ch2 = day.charAt(3);
```

If user enters "JONATHAN" which ones are true?

A) System.out.println(ch1 + ch2);
prints a number on the console

B) System.out.println("Result: " + ch1 + ch2);
prints Result: JN on the console

C) System.out.println("" + ch1 + ch2);
prints OA on the console

4.

```
String str1 = "JAVA";
String str2 = "Java";
String str3 = "JAVA";
```

Which ones print true on the console?

A) System.out.println(str1.equals(str2));

B) System.out.println(str1.equals(str3));

C) System.out.println(str1.equalsIgnoreCase(str2));

D) System.out.println(str2.equalsIgnoreCase(str3));

5.

```
if(year%100==0) {
    if(year%400==0) {
        System.out.println(year + " is lucky leap year");
    }else {
        System.out.println(year + " is not lucky leap year");
    }
}else {
    if(year%4==0) {
        System.out.println(year + " is simple leap year");
    }else {
        System.out.println(year + " is not simple leap year");
    }
}
```

Which one is false for the given code snippet?

A) If the year is 2000 the output will be 2000 is lucky leap year

B) If the year is 2020 the output will be 2020 is simple leap year

C) If the year is 1990 the output will be 1990 is not simple leap year

D) None

6. int x = y > 5 ? 3 * y : 4 * y;

Which one is false for the given code snippet?

A) If y = 11 then the value of x is 33

B) If y = 5 then the value of x is 20

C) If y = 0 then the value of x is 0

D) None

7. System.out.println(y>=0 && y<9 ? 11 : "Java");

Which ones are true for the given code snippet?

A) It gives Compile Time Error

B) If y = 9 then the output is Java

C) If y = 0 then the output is 11

D) If y = 'a' then the output is Java

8.
```
int a = 7;
if(a>10) {
    System.out.println("Good");
}else {
    System.out.println("Bad");
}
```

Which ones of the followings print the same output on the console with the given code snippet?

A)
```
int a = 10;
String result = a>10 ? "Good" : "Bad";
System.out.println(result);
```

B)
```
int a = 11;
System.out.println(a>10 ? "Good" : "Bad");
```

C)
```
char ch = 'm';
System.out.println(ch>='a' && ch<='z' ? "Bad" : "Good");
```

D)
```
char ch = 'K';
char result = ch>='A' && ch<='Z' ? "Bad" : "Good"
System.out.println(result);
```

9. String result = (a%2!=0 && a>29) ? ("Good") : ("Bad");
System.out.println(result);

Which ones are true?

A) If a = 33 then the output is Good

B) If a = 29 then the output is Bad

C) If a = 12 then the output is Bad

D) If a = 44 then the output is Good

10. int a = -5;
int result = a<0 ? (-1)*a : a;
System.out.println(result);

Which ones of the followings print the same output on the console with the given code snippet?

A)
```
int a = -5;
if(a<0) {
    System.out.println((-1)*a);
}else {
    System.out.println(a);
}
```

B)
```
int a = -5;
if(a>0) {
    System.out.println(a);
}else {
    System.out.println((-1)*a);
}
```

C)
```
int a = 5;
if(a<0) {
    System.out.println((-1)*a);
}else {
    System.out.println(a);
}
```

1.
```
switch(m) {
    case 'A':
        System.out.println("First letter");
        break;
    case 'B':
        System.out.println("Second letter");
    case 'C':
        System.out.println("Third letter");
        break;
    case 'D':
        System.out.println("Fourth letter");
    default:
        System.out.println("What kind of letter is this?");
}
```

For what values of m What kind of letter is this? output will be displayed on the console?

A) B

B) C

C) D

D) E

2. **int x = (y > 5) ?** (y<10 ? 2+y : 3*y) : (y>10 ? 2*y : 3+y)**;**

Which ones are true?

A) If y = 10 then the value of x is 30

B) If y = 4 then the value of x is 8

C) If y = 11 then the value of x is 13

D) If y = 1 then the value of x is 4

3.
```
switch(dayNum) {
    case 1:
        System.out.println("Sunday");
        break;
    case 2:
        System.out.println("Monday");
        break;
    case 3:
        System.out.println("Tuesday");
        break;
    case 4:
        System.out.println("Wednesday");
        break;
    case 5:
        System.out.println("Thursday");
        break;
    case 6:
        System.out.println("Friday");
        break;
    case 7:
        System.out.println("Saturday");
        break;
    default:
        System.out.println("Enter a valid day number");
    }
```

User will enter the number of a day. He wants to see all the day names which is starting from the day number which he entered on the console. In addition; User does not want to see default message on the console. To do that how many break statement should be deleted?

A) 5

B) 6

C) 7

D) 4

4. **String str = (y > 'a' && y<'z') ?** (y<'f' ? "Good" : "Bad") : (y>'K' ? "Big" : "Small")**;**

Which ones are true?

A) If y = 'c' then the value of str is Good

B) If y = 'h' then the value of str is Bad

C) If y = 'K' then the value of str is Small

D) If y = 'P' then the value of str is Big

5. boolean result = (y%2==0 || y<13) ? (true) : (y<0 ? true : false);
System.out.println(result);

Which one is false?

A) if y = 12 then
prints true on the console

B) if y = -12 then
prints true on the console

C) if y = 15 then
prints false on the console

D) if y = -17 then
prints false on the console

6. String result = (a%2!=0 && a>29) ? ("Good") : ("Bad");
System.out.println(result);

Which ones are true?

A) If a = 33 then the output is Good

B) If a = 29 then the output is Bad

C) If a = 12 then the output is Bad

D) If a = 44 then the output is Good

7.
```
int i = 1;
int  j = 0;
switch (i) {
      case 2 :
            j += 6;
      case 4 :
            j += 1;
      case 1 :
            j += 4;
      default :
      j += 2;
}
 System.out.println("j = " + j);
```

What is the output?

A) j = 6

B) j = 4

C) j = 2

D) j = 0

8.
```
char ch = 'a';
switch (ch){
    case 'a' :
    case 'A' :
        System.out.print(ch);
        break;
    case 'b' :
    case 'B' :
        System.out.print(ch);
        break;
    case 'c' :
    case 'C' :
        System.out.print(ch);
        break;
    case 'd' :
    case 'D' :
        System.out.print(ch);
}
```

What is the output?

A) a

B) a
a

C) a
A

D) a
a
A
A

9.
```
int number = 3;
if(number == 1) {
    System.out.println("One");
}
if(number == 2){
    System.out.println("Two");
}
if(number == 3){
    System.out.println("Three");
}
```

Which output of the followings is same with the given programs' output?

A)
```
int number = 3;
switch(number){
    case 1:
        System.out.println("One");
        break;
    case 2:
        System.out.println("Two");
        break;
    case 3:
        System.out.println("Three");
        break;
}
```

B)
```
int number = 3;
switch(number){
    case 1:
        System.out.println("One");
        break;
    case 2:
        System.out.println("Two");
        break;
    case 3:
        System.out.println("Three");
    default:
        System.out.println("Done");
}
```

C)
```
int number = 3;
switch(number){
    case 3:
        System.out.println("One");
        break;
    case 2:
        System.out.println("Two");
        break;
    case 1:
        System.out.println("Three");
        break;
    default:
        System.out.println("Done");
}
```

10.
```
int variable = 1;
switch (variable){
    case 1 :
        System.out.print("P");
    case 2 :
    case 3 :
        System.out.print("Q");
        break;
    case 4 :
        System.out.print("R");
    default :
        System.out.print("S");
}
```

What is the output?

A) P

B) S

C) PQ

D) PQR

1. Note: toUpperCase() method converts all characters in a String to uppercase

Which ones are true?

A) String str = "Hello World!";
System.out.println(str.length() > str.charAt(6));
prints false on the console.

B) String str = "Hello World!";
System.out.println(str.contains("E") != str.equalsIgnoreCase("HELLO WORLD!"));
prints true on the console.

C) String str = "Hello World!";
System.out.println(str.charAt(2) == str.charAt(9));
prints false on the console.

D) String str = "Hello World!";
System.out.println(str.toUpperCase().charAt(0) == str.charAt(0));
prints false on the console.

2. Note: toLowerCase() method converts all characters in a String to lowercase

Which ones are false?

A) String str = "Hello World!";
System.out.println(str.toLowerCase().contains("world"));
prints true on the console.

B) String str1 = "Hello";
String str2 = "HELLO";
System.out.println(str1.equals(str2.toLowerCase()));
prints true on the console.

C) String str = "Java";
System.out.println(str.replace('a', 'i'));
prints Jiva on the console.

D) String str = "Java";
System.out.println(str.replace('v', 'J'));
prints vava on the console.

3. Which ones are true?

A) String str = "Learn java, earn money";
System.out.println(str.replace("earn", "?"));
Gives Compile Time Error because instead of 4 characters you cannot replace 1 character.

B) String str = "Learn java, earn money";
System.out.println(str.replace('Learn', '?'));
Gives Compile Time Error

C) String str = "Learn java, earn money";
System.out.println(str.replace("Learn", '?'));
Gives Compile Time Error

D) String str = "Teach more, learn more";
System.out.println(str.replace("more", "less"));
Prints Teach less, learn more on the console

4. Which one is true?

A) String str = "Java";
System.out.println(str.replace("", "/"));
Prints J/a/v/a on the console

B) String str = "Java";
System.out.println(str.replace("", "/"));
Prints /J/a/v/a on the console

C) String str = "Java";
System.out.println(str.replace("", "/"));
Prints /J/a/v/a/ on the console

D) String str = "Java";
System.out.println(str.replace("", "/"));
Prints Java on the console

5. Which one is false?

A) String str = "Java";
System.out.println(str.replace("a", ""));
Prints Jv on the console

B) String str = "Java";
System.out.println(str.replace("a", ""));
Prints Jva on the console

C) String str = "Java";
System.out.println(str.replace("a", "A").replace('v','V'));
Prints JAVA on the console

D) String str = "Java";
System.out.println(str.replace("m", "A"));
Prints Java on the console

6. Which one is false?

A) String str = "Thank you!";
System.out.println(str.startsWith("T"));
Prints true on the console

B) String str = "Thank you!";
System.out.println(str.startsWith("Tha"));
Prints false on the console

C) String str = "Thank you!";
System.out.println(str.startsWith('T'));
Gives Compile Time Error

7. Which one is false?

A) String str = "Thank you!";
System.out.println(str.startsWith("h", 1));
Prints true on the console

B) String str = "Thank you!";
System.out.println(str.startsWith("a", 3));
Prints false on the console

C) String str = "Thank you!";
System.out.println(str.startsWith(4, "k"));
Gives Compile Time Error

D) None

8. Which ones are true?

A) String str = "Hello World";
System.out.println(str.endsWith("d"));
prints true on the console.

B) String str = "Hello World";
System.out.println(str.endsWith("World"));
prints true on the console.

C) String str = "Hello World";
System.out.println(str.indexOf("Wo"));
prints 6 on the console

D) String str = "Hello World";
System.out.println(str.indexOf('h'));
prints 0 on the console

9. **String s = "Java is Java";**

Which one is true?

A) System.out.println(s.indexOf('a'));
prints 2 on the console

B) System.out.println(s.indexOf("Java"));
prints 0 on the console

C) System.out.println(s.indexOf('a', 4));
prints 10 on the console

D) System.out.println(s.indexOf("va", 2));
prints 10 on the console

10. **String s = "Java is Java";**

Which ones are true?

A) System.out.println(s.lastIndexOf('v'));
prints 11 on the console

B) System.out.println(s.lastIndexOf("va"));
prints 10 on the console

C) System.out.println(s.toUpperCase().lastIndexOf("V"));
prints -1 on the console

D) System.out.println(s.toLowerCase().lastIndexOf("j"));
prints 8 on the console

11. **String s = "Learn";**

String t = "Java";

Which one is false?

A) System.out.println((s+t).length());
prints 9 on the console

B) System.out.println(s.length()+t.length());
prints 9 on the console

C) System.out.println(s+t.length());
prints Learn4 on the console

D) None

12. **String str= "Canan Can";**

Which ones print "true" on the console?

A) System.out.println(str.startsWith("c"));

B) System.out.println(str.endsWith("n"));

C) System.out.println(str.startsWith("a",3));

D) System.out.println(str.endsWith("Can"));

13. **String str = "Java is easy";**

Which ones are true?

A) System.out.println(str.substring(5));
Prints s easy

B) System.out.println(str.substring(11));
Prints y

C) System.out.println(str.substring(5, 9));
Prints is e

D) System.out.println(str.substring(8, 8));
Nothing is printed on the console

14. **String text = "Max wants to go TJ-Maximum";**

System.out.println(text.replace("Max", "Carl"));

What is the output?

A) Carl wants to go TJ-Maximum

B) Carl wants to go TJ-Carlimum

C) None of the givens

D) Carl wants to go Carl

15. **String str = "Ayhan BEYHAN";**

Which ones change the given String to AYHAN beyhan?

A) str = str.substring(0,5).toUpperCase();
str = str.substring(6).toLowerCase();

B) str = str.replace("Ayhan", "AYHAN");
str = str.replace("BEYHAN", "beyhan");

C) str = str.replace('Ayhan', 'AYHAN');
str = str.replace('BEYHAN', 'beyhan');

E) str = str.replace(str.substring(0), "AYHAN beyhan");

16. **String s = "123-Start!!!";**

Which ones are true?

A) System.out.println(s.replaceAll("\\W", "*"));
Prints 123*Start*** on the console

B) System.out.println(s.replaceAll("\\S", "*"));
Prints ********** on the console

C) System.out.println(s.replaceAll("[⊥Start]", "*"));
Prints ****Start*** on the console

D) System.out.println(s.replaceAll("\\A", "!!!"));
Prints !!!123-Start!!! on the console

17. **String s = "123-Start";**

Which ones are true?

A) System.out.println(s.replaceAll("\\d", ""));
Prints 123 on the console

B) System.out.println(s.replaceAll("\\w", ""));
Prints nothing on the console.

C) System.out.println(s.replaceAll("[at]", "*"));
Prints 123_S**r* on the console.

D) System.out.println(s.replaceAll("\\Z", "*"));
Prints 123_Start* on the console.

18. String s = " Tom Hanks ";

Note: There are 3 space characters at the beginning, 2 space characters at the end, a single space character between Tom and Hanks

Which one is true?

A) String s1 = s.trim();
System.out.println(s1);
Prints TomHanks on the console

B) String s1 = s.trim();
System.out.println(s1);
Prints Tom Hanks on the console

C) String trimmedString = s.trim();
System.out.println(s);
Prints Tom Hanks on the console

D) String trimmedString = s.trim();
System.out.println(s);
Prints TomHanks on the console

19. **String s = "Java is Java";**

Which one is true?

A) System.out.println(s.indexOf('a'));
Prints 2 on the console

B) System.out.println(s.indexOf("Java"));
Prints 0 on the console

C) System.out.println(s.indexOf('a', 4));
Prints 10 on the console

D) System.out.println(s.indexOf("va", 2));
Prints 10 on the console

20. **String s = "Java is Java";**

Which ones are true?

A) System.out.println(s.lastIndexOf('v'));
Prints 11 on the console

B) System.out.println(s.lastIndexOf("va"));
Prints 10 on the console

C) System.out.println(s.toUpperCase().lastIndexOf("V"));
Prints -1 on the console

D) System.out.println(s.toLowerCase().lastIndexOf("j"));
Prints 8 on the console

21. String s = "Learn";
String t = "Java";
String u = "";
String v = " ";
Note: u is empty String, v has space character

Which one is false?

A) System.out.println(s.concat(t)).length());
Prints 9 on the console

B) System.out.println("" + s.length() + t.length());
Prints 9 on the console

C) System.out.println(s.concat(t.length()));
Prints Learn4 on the console

D) System.out.println(u.isEmpty() == v.isBlank());
Prints true on the console

1. Note: i=i+1 and i++ have the same meaning

```
for (int i = 1; i <= 6; i++) {
    System.out.print(i + " ");
    i++;
}
```

What is the output?

A) 1 3 5

B) 2 4 6

C) 1 2 3 4 5 6

D) Compile Time Error

2.
```
for ( int j = 0; j <=10; ? ){
    System.out.print( j + " " );
}
```

Which ones of the followings can be the ? to get 0 3 6 9 on the console as output?

A) j = j + 3

B) j = j - 3

C) j++

D) j--

3.
```
for ( int j = 10; j >0; j++){
    System.out.print("Hello");
}
```

How many times is Hello printed on the console?

A) 10

B) 11

C) 0

D) Infinitely many times

4. Note: i=i-1 and i-- have the same meaning

```
for ( char i = 'f';  i>'a';  i--){
        System.out.print(i + " " );
        i--;
}
```

What is the output?

A) f d b

B) f e d c b

C) e c

D) Run Time Error

5.
```
int y = 1;
for (int i = 0; i<4; i++) {
        y += i;
}
System.out.println(y);
```

What is the output?

A) 5

B) 6

C) 7

D) 8

6.
```
for ( int i = 5; ?????? ; i++ ){
        System.out.print( i + " " );
}
```

What should we type instead of ?????? to make the output

5 6 7 8 9

A) i<10

B) i<=10

C) i<9

D) i==9

7.

Note: ASCII value of 'A' is 65

```
for(int i = 65; i < 68 ; i++){
    System.out.print((char)i);
}
```

A) ABC

B) 656667

C) CBA

D) 65B67

8.

```
for(int i = 65; i < 68 ; i--){
    System.out.println(i);
}
```

How many numbers do you see on the console?

A) 3

B) 4

C) 5

D) Infinitely many

9.

```
String s = "Marra";
for(int i = s.length()-1; i > -1; i--){
    char c = s.charAt(i)
    if(s.indexOf(c)==s.lastIndexOf(c)){
        System.out.print(c);
    }
}
```

What do you see on the console?

A) arra
B) M
C) Mar
D) ara

10.

```
String s = "Love";
for(int i = s.length()-1; i >= 0; i--){
    System.out.print(s.charAt(i));
}
```

What do you see on the console?

A) Love
B) evoL
C) LOVE
D) evol

1.
```
int i = 1;
while(i<=7) {
    System.out.println("Hello");
}
```

Which one is true for the given code?

A) It prints Hello on the console 7 times

B) It prints Hello on the console infinite times

C) It gives Compile Time Error

D) Nothing is printed on the console

2.
```
int j=1;
while(j<=10) {
    System.out.print(j + " ");
    j++;
}
```

Which one of the followings has the same output with the given code?

A)
```
int j=1;
while(j<11) {
    System.out.print(j + " ");
    j++;
}
```

B)
```
int j=1;
while(j<=10) {
    System.out.print(j + " ");
}
```

C)
```
int j=10;
while(j>=1) {
    System.out.print(j + " ");
    j++;
}
```

D)
```
int j=10;
while(j>=1) {
    System.out.print(j + " ");
    j--;
}
```

3. **Which ones of the followings print 2 4 6 8 on the console?**

A)
```
int k = 1;
while(k<5) {
    System.out.print(2*k + " ");
    k++;
}
```

B)
```
int k = 1;
while(k<=8) {
    if(k%2==0) {
        System.out.print(k + " ");
    }
    k++;
}
```

C)
```
for(int i=2; i<=8; i=i+2) {
        System.out.print(i + " ");
}
```

D)
```
for(int i=1; i<=8; i++) {
        if(i%2==0) {
        System.out.print(i + " ");
        }
}
```

4.
```
int i=1;
int sum=0;
while(i<=5) {
    sum = sum + i;
    i++;
}
System.out.println(sum);
```

What is the output of the given code?

A) 15
B) 1
   3
   6
   10
   15
C) 10
D) 1
   3
   6
   10

5.
```
int i=1;
int product=1;
while(i<=4) {
    product = product * i;
    i++;
    System.out.println(product);
}
```

What is the output of the given code?

A) 1
   2
   6
   24
B) 24
C) 1
   2
   6
D) 6

6. Which ones of the followings print 0 on the console?

A)
```
int i=1;
int product=0;
while(i<=4) {
    product = product * i;
    i++;
}
System.out.println(product);
```

B)
```
int j=1;
int sum=0;
while(j<1) {
    sum = sum + j;
    j++;
}
System.out.println(sum);
```

C)
```
int j=1;
int sum=0;
while(j==1) {
    sum = sum + j;
    j++;
}
System.out.println(sum);
```

7.
```
for(int i=1; i<=5; i++) {
    for(int j=(5-i); j>1; j--) {
        System.out.print(i+j);
    }
    System.out.println();
}
```

What is the output?

A) 543
54
5

B) 432
43
4

C) 5
4
3

D) 4
3
2

8.
```
public static void main(String[] args) {
    int x = 0;
    while(x < 10){
        x++;
    }
    String message = x > 10 ? "Greater than" : "Less than";
    System.out.println(message+""+x);
}
```

What is the output?

A) Less than,10

B) Greater than, 10

C) Compile Time Error

D) Run Time Error

9.

```
int x = 1, y = 15;
while (x < 4) {
    y--;
    x++;
}
System.out.println(x + ", " + y);
```

What is the output?

A) 4, 12

B) 5, 13

C) 3, 11

D) Compile Time Error

10.

```
int m = 10;
int n = 2;
int sum = 0;

while(m > n) {
    m--;
    n = n + 2;
    sum = sum + m + n;
}
System.out.println(sum);
```

What is the output?

A) 42

B) 40

C) 38

D) 36

1.

```
int x = 4;
long y = x * 4 - (x + 1);

if(y<11) {
    System.out.println("Too Low");
} else if(x>11){
    System.out.println("Too High");
} else {
    System.out.println("Just Right");
}
```

What is the output?

A) Just Right
B) Too High
C) Too Low
D) Compile Time Error

2.

```
int x = 6;
int result = x > 3 ? x < 5 ? 11 : 9 : 8;
System.out.println(result);
```

What is the output?

A) 11
B) 9
C) 8
D) Compile Time Error

3.

```
int m = 10;
int n = 2;
int sum = 0;
while(m > n) {
    m--;
    n = n + 2;
    sum = sum + m + n;
}
System.out.println(sum);
```

What is the output?

A) 42
B) 40
C) 38
D) 36

4.

```
int i = 1;
int x = 2;
while(i < 4){
    x = x + i;
    i++;
}
System.out.print(x);
```

What is the output?

A) 7
B) 8
C) 9
D) 10

5.

```
int y = 0;
for(int i = 1; i < 4; i++){
    y = y + i;
}
System.out.println(y);
```

Which ones of the followings print the same with the given code on the console?

A)
```
int y = 0;
System.out.println(y+6);
```

B)
```
int y = 0;
int i = 1;
while(i<4){
    y = y + i;
    i++;
}
System.out.println(y);
```

C)
```
int y = 0;
int i = 2;
while(i<5){
    y = y + i;
    i++;
}
System.out.println(y);
```

D)
```
int y = 1;
int z = y+=5;
System.out.println(z);
```

6.

```
int a = 80;
int b = 20;
while(a>=b){
    a -= 10;
    b += 10;
    System.out.println(a + "," + b);
}
```

What is the output?

A) 70,30
60,40
50,50
40,60

B) 70,30
60,40
50,50

C) 60,40
50,50
40,60

D) Compile Time Error

7.

```
Scanner scan = new Scanner(System.in);
String s = "";
    do {
        System.out.println("Enter your password");
        s = scan.nextLine();
        if(s.length()>6 && s.charAt(0)=='A') {
            System.out.println("It is okay");
        }else {
            System.out.println("Make the length longer than 6");
        }
    }while(!(s.length()>6));
    scan.close();
```

Which ones are true for the given codes?

A) If user enters Alignment, the output is It is okay

B) If user enters Align, the output is Make the length longer than 6

C) If user enters Aligns, the output is

Make the length longer than 6

Enter your password

D) Compile Time Error

8.

```
public static void main(String[] args) {
    add(3.0,4.0); // Output A
    add(5, 6); // Output B
    add(7, 8.0); // Output C
    subtract(9, 10); //Output D
}
public static void add(double n1, double n2) {
    System.out.println(n1 + n2);
}
public static void add(int n1, int n2) {
    System.out.println(n1 + n2);
}
public void subtract(int n1, int n2) {
    System.out.println(n1 - n2);
}
```

Which ones are true for the given code?

A) Output A is 7

B) Output B is 11

C) Output C is 15.0

D) Output D is -1

9.
```
int i=1;
do{
    if(i != 3){
        System.out.print(i + " ");
    } else {
        continue;
    }
    i++;
}while(i<5);
```

What is the output?

A) 1 2

B) 1 2 4 5

C) 1 2 3 4

D) 1 2 4

10.
```
int i=1;
do{
    if(i == 3){
        continue;
    } else if(i == 5){
        System.out.print(i + " ");
        break;
    } else{
        System.out.print(i + " ");
    }
     i++;
}while(true);
```

What is the output?

A) 1 2 4 5

B) 1 2 4 5 6 7 ... goes to infinity

C) 1 2 4

D) Gives compile time error

1. int arr$_1$[] = {1, 2, 3};
int arr2[] = {1, 2, 3};
int arr3[] = {3, 2, 1};

Which ones print true on the console?

A) System.out.println(Arrays.equals(arr1, arr3));

B) System.out.println(arr1==arr1);

C) System.out.println(Arrays.equals(arr1, arr2));

D) System.out.println(arr1.equals(arr2));

2. int arr[] = {1, 23, 12, 2, 3};

Which code is correct to check if 12 is the element of the array arr or not?

A) Arrays.sort(arr);
System.out.println(Arrays.binarySearch(arr, 12));

B) System.out.println(Arrays.binarySearch(arr, 12));

C) Arrays.sort(arr);
System.out.println(Arrays.binarySearch(12));

D) System.out.println(Arrays.binarySearch(12));

3. int arr[] = {12, 23, 13, 2, 3};
Arrays.sort(arr);
System.out.println(Arrays.binarySearch(arr, 12));

What is the output?

A) 2

B) 3

C) [2, 3]

D) Gives Compile Time Error

4. int arr[] = {12, 23, 12, 2, 3};
Arrays.sort(arr);
System.out.println(Arrays.binarySearch(arr, 5));

What is the output?

A) Gives Compile Time Error
B) Gives Run Time Error
C) -3
D) -2

5. String s = "I liked to move it move it";

Which ones are true for the given String?

A) String arr[] = s.split(" "); (Note: There is space between double quotes)
System.out.println(arr.length);
Prints 7 on the console

B) String arr[] = s.split("move");
System.out.println(arr[1]);
Prints it on the console (Note: Before and after it there is 1 space)

C) String arr[] = s.split("it");
System.out.println(Arrays.toString(arr));
Prints [I liked to move , move] on the console

6. String phoneNumber = "+1-407-640-1256";

Which ones print just 407 on the console?

A) System.out.println(phoneNumber.substring(3, 6));

B) String arr[] = phoneNumber.split("-");
System.out.println(arr[1]);

C) System.out.println(phoneNumber.substring(3));

D) String arr[] = phoneNumber.split("407");
System.out.println(arr[0]);

7.

```
public class Test01 {
    public static void main(String args[]){
        String input = "Hello Welcome to TechPro Education";
        String[] result1 = input.split(" ");
        String[] result2 = input.split("X");
        System.out.println(result1.length + "-" + result2.length);
    }
}
```

What is the output?

A) 5-1

B) 4-0

C) 6-2

D) 4-2

8.

```
int arr[] = {21, 22, 23, 24, 25, 26};
```

Which one is false?

A) System.out.println(arr[1]);
prints 22 on the console

B) System.out.println(arr.length);
prints 6 on the console

C) System.out.println(arr[6]);
prints 26 on the console

D) for(int i=0; i<arr.length; i++) {
System.out.print(arr[i] + " ");
}
prints 21 22 23 24 25 26 on the console

9.

```
String s = "Java, I like Java?"
String arr[] = s.split("");
int counter = 0;
for(int i=0; i<arr.length; i++) {
if(arr[i].equals("a")) {
counter++;
}
}
System.out.println("The number of the character: " + counter);
```

What is the output?

A) The number of the character: 3
B) The number of the character: 4
C) The number of the character: 5
D) The number of the character: 6

10.

```
String s = "Java, I like Java?"
String arr[] = s.split("a");
System.out.println("The number of the character: " + (arr.length-1));
```

What is the output?

A) The number of the character: 3
B) The number of the character: 4
C) The number of the character: 5
D) The number of the character: 6

1.
```
public class Test01 {
    public static void main(String[] args) {
        int[][] x = {{2, 1}, {1, 7, 1}};
        System.out.println(m(x[1]));
    }
    public static int m(int[] m) {
        int result = 0;
        for (int i = 0; i < m.length; i++){
            result += m[i];
        }
        return result;
    }
}
```

What is the output?

A) 8 B) 9 C) 10 D) 11

2.
```
public class Test02 {
    public static void main(String[] args) {
        int[][] x = {{1, 2}, {3, 4, 5}};
        System.out.println(m(x));
    }
    public static int m(int[][] m) {
        int result = 3;
        for (int i = 0; i < m.length; i++) {
            for (int j = 0; j < m[i].length; j++) {
                result += m[i][j];
            }
        }
        return result;
    }
}
```

A) 15 B) 16 C) 17 D) 18

3.

```
public class Test03 {
    public static void main(String[] args) {
        int[][] x = {{2, 1}, {5, 7, 6}};
        System.out.println(m(x));
    }
    public static int m(int[][] m) {
        int result = m[0][1];
        for (int i = 0; i < m.length; i++) {
            for (int j = 0; j < m[i].length; j++) {
                if (result < m[i][j]) {
                    result = m[i][j];
                }
            }
        }
        return result;
    }
}
```

What is the ouput?

A) 1

B) 2

C) 6

D) 7

4.

```
public class Test04 {

    public static void main(String[] args) {
        int arr[][] = { {3,2,1},{1,2,3} };
        for (int i = 1; i < arr.length; i++) {
            for (int k = 1; k < arr[0].length; k++) {
                if (arr[i][k] % 2 == 1){
                    arr[i][k] = arr[i][k] + 1;
                }
                if (arr[i][k] % 2 == 0){
                    arr[i][k] = arr[i][k] * 2;
                }
            }
        }
    System.out.println(Arrays.deepToString(arr));
    }
}
```

What is the output?

A) [[3, 2, 1], [1, 4, 8]]

B) [[4, 3, 2], [1, 4, 8]]

C) [[4, 3, 2], [1, 2, 3]]

D) [[3, 2, 1], [1, 2, 3]]

5.

```
public class Test05 {

    public static void main(String[] args) {
        int arr[][] = {{5, 12}, {3, 8, 4}, {6, 3}};
        System.out.println(m(arr));

    }
    public static int m(int[][] arr) {
        int r, c;
        int i, k = 0;

        for (r = 0; r < arr.length; r++) {
            for (c = 0; c < arr[0].length; c++) {
                i = arr[r][c];
                if (i > k)
                    k = i;
                }
            }
            return k;
        }
    }
```

What is the output?

A) 12

B) 8

C) 3

D) 5

1.

```
public static void main(String[] args) {
    ArrayList<String> list = new ArrayList<String>() ;
    list.add( "A" );
    list.add( "B" );
    list.add( "F" );
    list.add( "D" );
}
```

Which one is true for the given code snippet?

A) list.set(2, "C");
System.out.println(list);
Prints [A, B, C, D] on the console

B) list.add(1,"*");
System.out.println(list);
Prints [*, A, B, C, D] on the console

C) System.out.println(list.contains("F"));
Prints false on the console

D) System.out.println(list.isEmpty());
Prints true on the console

2.
```
public static void main(String[] args) {
    ArrayList<String> list = new ArrayList<String>();
    list.add("A");
    list.add("B");
    list.add("C");
    list.add("D");

    list.remove(3);
    list.remove("A");
System.out.println(list);
}
```

What is the output?

A) [B, C]

B) Run Time Error

C) [B, C, D]

D) Compile Time Error

3.
```
public static void main(String[] args) {
    ArrayList<String> list = new ArrayList<String>();
    list.add("A");
    list.add("B");
    list.add("C");
    list.add("D");

    System.out.println(list.remove(2));
    System.out.println(list.remove("C"));
}
```

What is the output?

A) C
   false

B) false
   C

C) true
   false

D) C
   C

4. **Note: get() method returns the list element whose index is given as a parameter**

```
public static void main(String[] args) {
    ArrayList<String> list = new ArrayList<String>();
    list.add("A");
    list.add("B");
    list.add("C");
    list.add("D");
    for (int i = 0; i < list.size(); i++) {
        System.out.print(list.get(i) + " ");
    }
}
```

What is the output?

A) A B C D

B) [A, B, C, D]

C) Run Time Error

D) Compile Time Error

5.

```
public static void main(String[] args) {
    int arr[] = new int[5];
    ArrayList<Integer> list = new ArrayList<Integer>();
    for (int i = 1; i <= arr.length; i++) {
        list.add(i);
    }
    System.out.println(list);
}
```

What is the output?

A) [1, 2, 3, 4, 5]

B) [ ]

C) Compile Time Error

D) [1, 2, 3, 4]

6.
```
public class Test01 {
    List<String> list1 = new ArrayList<String>();
    public static void main(String[] args) {
        Test01 obj1 = new Test01();
        obj1.myMethod(obj1.list1);
        obj1.list1.add("z");
        obj1.list1.add("t");
        System.out.println(obj1.list1);
    }
    public List<String> myMethod(List<String> list1) {
        list1.add("x");
        list1.add("y");
        return list1;
    }
}
```

What is the output?

A) [x, y, z, t]

B) [x, y]

C) [z, t]

D) Compile Time Error

7.
```
public static void main(String[] args) {
    ArrayList<Character> list = new ArrayList<Character>();
    for (char i = 'a'; i <= 'e' ; i++) {
        list.clear();
        list.add(i);
    }
    System.out.println(list);
}
```

What is the output?

A) [ ]

B) [e]

C) [a, b, c, d, e]

D) Compile Time Error

8. **Which ones give Compile Time Error?**

A) List<Character> list = new ArrayList<Character>();

B) List<int> list = new ArrayList<>();

C) ArrayList<> list = new ArrayList<String>();

D) ArrayList<boolean> list = new ArrayList<>();

9.
```
public static void main(String[] args) {
    List<Integer> list = new ArrayList<>();
    list.add(3);
    list.add(5);
    list.add(7);
    list.add(9);

    int i = 0;
    int x = 0;
    while(i<list.size()) {
        x = x + list.get(i);
        i++;
    }
    System.out.println(x);
}
```

What is the output?

A) 24

B) Compile Time Error

C) 9

D) 15

10.

```
public static void main(String[] args) {
    int arr[] = {2, 4, 6, 8};
    List<Integer> list = new ArrayList<>();
    int i = 0;
    do {
        list.add(arr[i]);
        i++;
    } while (i < arr.length);
    System.out.println(list);
}
```

What is the given code snippet doing?

A) Converting an array to a list

B) It gives Compile Time Error

C) Converting a list to an array

D) It gives Run Time Error

1.
```
public class Try {
    static int a = 10;
    public static void main(String[] args) {
        Try t1 = new Try();
        Try t2 = new Try();
        t1.a = a + 2;
        t2.a = a + 3;
        System.out.println(t1.a);
        System.out.println(t2.a);
    }
}
```

What is the output?

A) 15
   15
B) 12
   13
C) 12
   15
D) 10
   10

2.
```
public class Try {
    int a = 10;
    public static void main(String[] args) {
        Try t1 = new Try();
        Try t2 = new Try();
        t1.a = 12;
        t2.a = 13;
        System.out.println(t1.a);
        System.out.println(t2.a);
    }
}
```

A) 12
   13
B) 15
   15
C) 13
   12
D) 10
   10

3. Which ones are true?

A) Static variables or methods can be accessed by using just class name

B) We have to create object to access non-static variables or non-static methods

C) Other name of static variables is class variable and other name of instance variables is object variable

D) Static variables are shared by all objects but instance variables are not

4.

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

    }
    public static void m1(float x) {
        System.out.println("Method 1");
    }
    public static void m1(int x, double y) {
        System.out.println("Method 2");
    }
}
```

If the following codes are printed inside the main method, which ones are false?

A) m1(33);
prints Method 1 on the console

B) m1(33, 44);
prints Method 2 on the console

C) m1(33.3, 44);
prints Method 2 on the console

D) m1(33.3);
prints Method 1 on the console

5.
```
class Student{
    String name;
    static String college ="UNF";

    Student(String n, String college){
    this.name = n;
    this.college = college;
    }

    public static void main(String args[]){
        Student s1 = new Student("Mark", "UCF");
        Student s2 = new Student("Kevin", "FIU");

        System.out.println(s1.name);
        System.out.println(s2.name);

        System.out.println(s1.college);
        System.out.println(s2.college);
    }
}
```

What is the output?

A) Mark
Kevin
FIU
FIU

B) Mark
Kevin
UCF
FIU

C) Kevin
Kevin
UCF
FIU

D) Kevin
Kevin
FIU
FIU

6.

```
class Counter {
    int count=0;
    Counter(){
        count+=2;
        System.out.println(count);
    }
    public static void main(String args[]){
        Counter c1=new Counter();
        Counter c2=new Counter();
        Counter c3=new Counter();
    }
}
```

A) 2
   2
   2

B) 0
   2
   4

C) 2
   4
   6

D) 6
   6
   6

7.

```
public class Test1 {
    int y = 5;
    static int x = 7;
    public static void main(String[] args) {
        Test1 t1 = new Test1();
        Test1 t2 = new Test1();

        t1.x = 17;
        t1.y = 15;
        System.out.print(t1.x + " ");
        System.out.println(t2.x);
        System.out.print(t1.y + " ");
        System.out.println(t2.y);
    }
}
```

What is the output?

A) 17 17
   15 5

B) 17 17
   15 15

C) 17 7
   15 5

D) 7 7
   5 5

8.

```
public class StaticDemo {
    int num1 = 5;
    static int num2 = 7;

    public static void main(String args[]) {
        StaticDemo s1 = new StaticDemo();
        StaticDemo s2 = new StaticDemo();
        s1.num1 = 13;
        s1.num2 = 23;
        s2.num1 = 33;
        s2.num2 = 43;
        System.out.println(s1.num1 + " " + s1.num2 + " " + s2.num1 + " "+ s2.num2);
    }
}
```

What is the output?

A) 13 43 33 43

B) 13 23 33 43

C) 33 23 33 43

D) 13 43 13 43

9.

```
public class Static03 {
    static int counter = 0;
    int age = 0;
    public Static03() {
        counter++;
        age++;
    }

    public static void main(String[] args) {
        Static03 obj1 = new Static03();
        Static03 obj2 = new Static03();
        Static03 obj3 = new Static03();

        System.out.println(obj1.counter);
        System.out.println(obj2.counter);
        System.out.println(obj3.counter);

    System.out.print(" - ");

        System.out.println(obj1.age);
        System.out.println(obj2.age);
        System.out.println(obj3.age);
    }
}
```

What is the output?

A) 333 - 111

B) 333 - 333

C) 123 - 111

D) 123 - 123

10.
```
public class Test {
    String studentName;
    String year = "2020";
    static int counter = 1000;
    String studentId;
    public Test() {
        Scanner scan = new Scanner(System.in);
        System.out.println("Enter your name");
        studentName = scan.next();
        setStudentId();
    }
    public static void main(String[] args) {

        Test student1 = new Test();
        System.out.println(student1.studentName + student1.studentId); //A
        Test student2 = new Test();
        System.out.println(student2.studentName + student2.studentId); //B
    }
    public void setStudentId() {
        counter++;
        this.studentId = year + "" + counter;
    }
}
```

If user enters "Ali Can" for the first student's name, and "Veli Han" for the second student's name, what is the output for A and B?

A) A ==> Ali20201001
   B ==> Veli20201002

B) A ==> Ali20201001
   B ==> Veli20201001

C) A ==> Ali Can20201001
   B ==> Veli Han20201002

D) A ==> Ali Can20201001
   B ==> Veli Han20201001

1.
```
public static int m1(boolean b1, boolean... b2) {
    return b2.length;
}
```

Which one of the followings returns 2?

A) m1(true, false, true);

B) m1(false, true);

C) m1(true, false, true, true);

D) m1();

2.
```
public static void m3(String x, int... y) {
    int p = 1;
    for(int w: y) {
        p = p * w;
    }
    System.out.print(x);
    System.out.println(p);
}
```

Which one is <u>false</u>?

A) m3("Result: ", 2, 3, 4);
Prints Result: 24 on the console

B) m3("Result: ", 2, 2.5);
Prints Result: 5 on the console

C) m3("Result: ");
Prints Result: 1 on the console

D) m3("Result: ", 2);
Prints Result: 2 on the console

3. Which ones give Compile Time Error?

A)
```
public static void m4(int i, int... j, int... k) {
    System.out.println(k.length);
}
```

B)
```
public static void m4(int... j, int k) {
    System.out.println(j.length);
}
```

C)
```
private class Test02 {
}
```

D)
```
protected class Test02 {
}
```

4.
```
public class Test1 {
    public static void main(String args[]) {
        m1(10);
        m1(11, 12, 13, 14);
    }
    static void m1(int... a) {
        System.out.println("==> " + a.length);
        for (int i : a) {
            System.out.print(i + " ");
        }
        System.out.println();
    }
}
```

What is the output?

A)
```
==> 1
10
==> 4
11 12 13 14
```

B)
```
==> 10
1
==> 11 12 13 14
4
```

C)
```
==> 10
==> 11 12 13 14
```

5.
```
public static void m2(int i, int j, int... k) {
    System.out.println(k.length);
}
```

Which one is false?

A) m2(1, 2, 3, 4);
Prints 4 on the console

B) m2(1, 2, 3, 4, 5);
Prints 3 on the console

C) m2(1, 2);
Prints 0 on the console

D) m2(1);
Gives Compile Time Error

6.
```
public class Test2 {
    static void m2(String str, int... a) {
        System.out.println(str);
        for (int i : a) {
            System.out.print(i + " ");
        }
        System.out.println();
    }
    public static void main(String args[]) {
        **********
    }
}
```

Which ones are true if you type the following codes instead of ******** ?**

A) m2("Java", 101, 102);
The output is Java
101 102

B) m2(100, 101, 102);
The output is 100
101 102

C) m2(101, 102);
The output is 101 102

D) m2(100, 101, "102");
Gives Compile Time Error

1. StringBuilder strBld = new StringBuilder(6);
strBld.append("Learn");
strBld.append("Java");
System.out.println(strBld);

What is the output?

A) LearnJ
B) LearnJava
C) Run Time Error
D) Compile Time Error

2. StringBuilder strBld = new StringBuilder("LearnJava");

Which ones are true for the given StringBuilder object?

A) strBld.substring(3);
System.out.println(strBld);
Prints LearnJava on the console

B) strBld.insert(0,"You");
System.out.println(strBld);
Prints YouLearnJava on the console

C) strBld.reverse();
System.out.println(strBld);
Prints avaJnraeL on the console

D) strBld.delete(5, 9);
System.out.println(strBld);
Prints Learn on the console

3. StringBuilder strBld = new StringBuilder("John ");
strBld.append("Woo ").append("Leo").deleteCharAt(6);
System.out.println(strBld);

What is the output?

A) John Wo Leo
B) John Woo Leo
C) John oo Leo
D) John W

4. **Which one is false?**

A)
```
public static void main(String[] args) {
    StringBuilder str = new StringBuilder("LearnJava");
    str.deleteCharAt(3);
    System.out.println(str.substring(2, 6));
}
```
The output is anJa

B)
```
public static void main(String[] args) {
    StringBuilder str = new StringBuilder("LearnJava");
    str.setCharAt(5, 'L');
    System.out.println(str);
}
```
The output is LearnLava

C)
```
public static void main(String[] args) {
    StringBuilder str = new StringBuilder(7);
    str.append("Java");
    System.out.println(str.capacity() + "," + str.length());
}
```
The output is 4,7

D) None

5. Which ones are true?

A)
```
public static void main(String[] args) {
    StringBuilder str = new StringBuilder("LearnJava");
    int index = str.indexOf("earn");
    System.out.println(index);
}
```
The output is 1

B)
```
public static void main(String[] args) {
    StringBuilder str = new StringBuilder("LearnJava");
    int index = str.indexOf("a", 4);
    System.out.println(index);
}
```
The output is 6

C)
```
public static void main(String[] args) {
    StringBuilder str = new StringBuilder("LearnJava");
    int index = str.indexOf("e", 4);
    System.out.println(index);
}
```
Gives Compile Time Error

6.
```
public static void main(String[] args) {
    StringBuilder str = new StringBuilder("LearnJava");
    str.reverse();
    System.out.println(str);
}
```

Which output is the same with the given code?

A)
```
public static void main(String[] args) {
    String str2 = "LearnJava";
    String str3 = "";
    for(int i = str2.length()-1; i>=0; i--) {
        str3 = str3 + str2.charAt(i);
    }
    System.out.println(str3);
}
```

B)
```
public static void main(String[] args) {
    String str2 = "LearnJava";
    String str3 = "";
    for(int i = 0; i<=str2.length()-1; i++) {
        str3 = str3 + str2.charAt(i);
    }
    System.out.println(str3);
}
```

C)
```
public static void main(String[] args) {
    String str2 = "LearnJava";
    String str3 = "";
    for(int i = str2.length()-1; i>=0; i++) {
        str3 = str3 + str2.charAt(i);
    }
    System.out.println(str3);
}
```

7. Knowledge: append(char ch) is used to append the string representation of the char argument to the given sequence. The char argument is appended to the contents of this StringBuilder sequence.

```
public static void main(String[] args) {
    StringBuilder stb = new StringBuilder("Learn ");
    char[] ch = new char[] { 'J', 'A', 'V', 'A' };
    stb.append(ch);
    System.out.println(stb);
    }
```

According to the given knowledge what is the output?

A) Learn JAVA

B) JAVA

C) JAVA Learn

D) Learn

8. **Which ones are true?**

A)
```
public static void main(String[] args) {
    String str = "Learn";
    str = str + "Java";
    System.out.println(str);
}
```
The output is LearnJava

B)
```
public static void main(String[] args) {
    String str = "Learn";
    System.out.println(str + "Java");
}
```
The output is LearnJava

C)
```
public static void main(String[] args) {
    String str = "Learn";
    join("Java");
    System.out.println(str);
}
public static String join(String str) {
    return str + "Java";
}
```
The output is LearnJava

D) None

9. Note: Default capacity for empty StringBuilders is 16.
Note: When you add new characters into an empty StringBuilder, the number of characters will be added to 16.

```
StringBuilder sb3 = new StringBuilder("Learn");
System.out.println("Before trim: " + sb3.capacity());
sb3.trimToSize();
System.out.println("After trim: " + sb3.capacity());
```

What is the output?

A) Before trim: 21
   After trim: 5

B) Before trim: 5
   After trim: 5

C) Before trim: 5
   After trim: 21

D) Before trim: 16
   After trim: 5

10. **Which <u>ones</u> are true?**

A) StringBuilder sb = new StringBuilder(9);
   System.out.println(sb.length() + " - " + sb.capacity());
   Output is 0 - 9

B) StringBuilder sb = new StringBuilder();
   System.out.println(sb.length() + " - " + sb.capacity());
   Output is 0 - 16

C) StringBuilder sb = new StringBuilder("Java");
   System.out.println(sb.length() + " - " + sb.capacity());
   Output is 4 - 20

D) StringBuilder sb = new StringBuilder("StringBuilder");
   System.out.println(sb.delete(3, 6).toString() + " - " + sb.length());
   Output is StrBuilder - 10

1.
```
public class Encapsulation {
    private int ssn = 100003123;
    private String disease = "Cancer";
    private double salary = 200000;
    public int getSsn() {
        return ssn;
    }
    public void setSsn(int ssn) {
        this.ssn = ssn;
    }
    public void setDisease(String disease) {
        this.disease = disease;
    }
    public double getSalary() {
        return salary;
    }
}
```

Which ones are true for the given code snippet?

A) ssn, disease, and salary variables are encapsulated.
B) The data values of ssn and salary variables can be read from other classes
C) The value of salary variable can be updated from other classes
D) The value of disease variable can be read from other classes

2. **Which one is false for Encapsulation?**

A) Static and instance variables can be encapsulated
B) Just private variables can be encapsulated.
C) getters are for reading the data values of variables from other classes
D) setter are for updating the data values of variables from other classes

3.
```
public class Encapsulation {
    private int ssn = 1234;
    private String disease = "Headahce";
    private double salary = 100000;
    public int getSsn() {
        return ssn;
    }
    public void setSsn(int ssn) {
        this.ssn = ssn;
    }
    public void setDisease(String disease) {
        this.disease = disease;
    }
    public double getSalary() {
        return salary;
    }
}
```

Which one is <u>false</u> for the given code snippet?

A) Encapsulation obj = new Encapsulation();
System.out.println(obj.getSsn());
Prints 1234 on the console

B) Encapsulation obj = new Encapsulation();
obj.setSsn(6789);
System.out.println(obj.getSsn());
Prints 6789 on the console

C) Encapsulation obj = new Encapsulation();
System.out.println(obj.getDisease());
Prints Headache on the console

4.
```
public class Test1 {
    private String gender = "Male";
    private int age = 23;
    private boolean disabled = false;
    public int getAge() {
        return age;
    }
    public void setAge(int age) {
        this.age = age;
    }
    public boolean isDisabled() {
        return disabled;
    }
    public void setDisabled(boolean disabled) {
        this.disabled = disabled;
    }
    public String getGender() {
        return gender;
    }
}
```

Which one is <u>false</u>?

A)
```
public static void main(String[] args) {
    Test1 obj1 = new Test1();
    obj1.setDisabled(true);
    System.out.println(obj1.isDisabled());
}
```
Prints true on the console

B)
```
public static void main(String[] args) {
    Test1 obj1 = new Test1();
    obj1.setGender("Female");
    System.out.println(obj1.getGender());
}
```
Prints Female on the console

C)
```
public static void main(String[] args) {
    Test1 obj1 = new Test1();
    System.out.println(obj1.setAge());
}
```
Gives Compile Time Error

D) None

5. **Which one is false?**

A) If you create just getters methods for encapsulated data, it means you created an immutable class

B) If you want to make all encapsulated data unreadable then you should not create getters methods.

C) If you want all data not to be updated then you should not create setters methods.

D) None

6.
```
public class Student {
    public int id;
    protected String name;

    public int getId() {
        return id;
    }
    public void setId(int id) {
        this.id = id;
    }
    public String getName() {
        return name;
    }
}
```

Which ones of the followings should be done to make the class immutable class?

A) Change the access modifiers of id and name variables to private

B) Delete the setId(int id) method

C) Delete all getters

D) Change the access modifier of Student class to private

7.
```
public class Test1 {
    public int id;
    protected String name;
    public void getId() {
        return id;
    }
    public int setId(int id) {
        this.id = id;
    }
    public String getName() {
        return name;
    }
}
```

Which ones should be done for the given class to exhibit fully encapsulation?

A) Change the access modifiers of id and name variables to private

B) Change the return type of getId() to int

C) Change the return type of setId(int id) to void

D) Add the set method for name variable

8.
```
public class Test1 {
    private double width;
    private double height;
    private double screenSize;
    private int maxVolume;
    private int volume = 12;
    private boolean power;
    public Test1(double width, double height, double screenSize) {
        this.width = width;
        this.height = height;
        this.screenSize = screenSize;
    }
    public double channelTuning(int channel) {
        switch (channel) {
        case 1:
            return 34.56;
        case 2:
            return 54.89;
        case 3:
            return 73.89;
        case 4:
            return 94.98;
        }
        return 0;
    }
    public int decreaseVolume() {
        if (0 < volume) {
            volume--;
        }
        return volume;
    }
    public void powerSwitch() {
        this.power = !power;
    }
    public int increaseVolume() {
        if (maxVolume > volume)
            volume++;
        return volume;
    }
}
```

Which ones are true?

A)
```
public class Test2 {
    public static void main(String args[]){
    Test1 t= new Test1(11.5,7,9);
    t.powerSwitch();
    System.out.println(t.channelTuning(2));
    }
}
```
Prints 54.89 on the console

B)
```
public class Test2 {
    public static void main(String args[]){
    Test1 t= new Test1(11.5,7,9);
    t.powerSwitch();
    System.out.println(t.decreaseVolume());
    }
}
```
Prints 11 on the console

C)
```
public class Test2 {
    public static void main(String args[]){
    Test1 t= new Test1(11.5,7,9);
    t.powerSwitch();
    System.out.println(t.width);
    }
}
```
Prints 0 on the console

9.
```
public class Student {
    private int id = 12345;
    private String name = "Ali Can";

    public int getId() {
        return id;
    }
    public void setId(int id) {
        this.id = id;
    }
    public String getName() {
        return name;
    }
}
```

Which one is <u>false</u>?

A) I can read and update the value of id

B) I can update but cannot read the value of name

C) The name of all objects which are created from Student class is Ali Can.

D) We can provide different ids for every object which are created from Student class

10. What are the advantages of Encapsulation?

A) The encapsulated code is more flexible and easy to change with new requirements

B) Encapsulation allows modifying implemented the code without breaking others code who have implemented the code.

C) It keeps the data and codes safe from external inheritance. Thus, Encapsulation helps to achieve security.

D) It improves the maintainability of the application.

E) It improves the reusability.

1.
```
public class Animal {
    public int weight;
    public static void main(String[] args) {
    }
}
public class Mammal extends Animal {
    protected boolean feed = true;
    public static void main(String[] args) {
    }
}
public class Dog extends Mammal {
    private boolean bark = true;
    public static void main(String[] args) {
        Dog dog = new Dog();
        System.out.println(dog.bark);
        System.out.println(dog.feed);
        System.out.println(dog.weight);
    }
}
```

Which one is true?

A) true
   true
   0

B) Compile Time Error in System.out.println(dog.bark);

C) Runs but no output

D) Run Time Error

2. **Which of the followings are true about inheritance in Java?**

A) In Java, all classes inherit from the Object class

B) In Java, all classes have parent class except Object class

C) public and protected class members can be inherited without any issue

D) default class members cannot be inherited

3. public class A { }
public class B extends A { }
public class C extends B { }

Which ones are true?

A) C IS-A B
B) C IS-A A
C) B HAS-A C
D) A HAS-A C

4. **Which one is false?**

A) public class Animal { }
public class Mammal extends Animal { }
This is "Single Inheritance" and Java supports it.

B) public class Animal { }
public class Mammal extends Animal { }
public class Mammal extends Creator { }
This is "Multiple Inheritance" and Java supports it.

C) public class Animal { }
public class Mammal extends Animal { }
public class Dog extends Mammal { }
This is "Multi Level Inheritance" and Java supports it.

D) public class Animal { }
public class Dog extends Animal { }
public class Cat extends Animal { }
This is "Hierarchical Inheritance" and Java supports it.

5.
```
public class Animal {
    public void m1()
    public void m2()
}
public class Mammal extends Animal {
    public void m3()
}
public class Dog extends Mammal {
    public void m4()
    public void m5()
}
```

Which one is true?

A) Dog obj = new Dog();
We can access m1(), m2(), m3(), m4(), and m5() objects by using obj object.

B) Dog obj = new Dog();
We can access just m4(), and m5() objects by using obj object.

C) Dog obj = new Dog();
We can access just m3(), m4(), and m5() objects by using obj object.

D) Gives Compile Time Error

6.

```
package x
public class Animal {
    void m1()
    private void m2()
}
package y
public class Mammal extends Animal {
    public void m3()
    protected void m4()
    void m5()
}
package y
public class Dog extends Mammal {
    public void m6()
    private void m7()
 }
```

If the following codes printed in a Runner Class which one is true?

A) Dog obj = new Dog();
We can access just m3(), m4(), m5(), m6(), and m7() objects by using obj object.

B) Dog obj = new Dog();
We can access m1(), m2(), m3(), m4(), m5(), m6(), and m7() objects by using obj object.

C) Dog obj = new Dog();
We can access just m2(), m3(), m4(), m5(), m6(), and m7() objects by using obj object.

D) Dog obj = new Dog();
We can access just m3(), m4(), m5(), m6() objects by using obj object.

7. **Which ones are true?**

A) If X IS-A Y then X is sub class of Y and Y is super class of X

B) If X HAS-A Y then X is super class of Y and Y is sub class of X

C) If X IS-A Y and Y HAS-A Z but Z is not or has not X then X and Z are siblings

D) If X IS-A Y and Z HAS-A X but Y is not or has not Z then Java does not support that relationship

8. public class A { }
public class B extends A { }
public class C extends B { }

Which ones are true?

A) A and B are 2 super classes

B) B and C are sub classes

C) This is multi level inheritance

D) Java does not support that kind of inheritance

9.
```
public class Animal {
    public int weight = 12;
    protected boolean feed = true;
    public static void main(String[] args) {
    }
}
public class Mammal extends Animal {
    public int weight = 13;
    public boolean bark = false;
    public static void main(String[] args) {
    }
}
public class Dog extends Mammal {
    private boolean bark = true;
    public static void main(String[] args) {
        Dog dog = new Dog();
        System.out.println(dog.bark);
        System.out.println(dog.feed);
        System.out.println(dog.weight);
    }
}
```

Which one is true?

A) true
true
13

B) Compile Time Error in System.out.println(dog.bark);

C) true

D) Run Time Error

10.
```
public class Animal {
    public int weight;
    public static void main(String[] args) {
    }
}
public class Mammal extends Animal {
    protected boolean feed = true;
    public static void main(String[] args) {
    }
}
public class Dog extends Mammal {
    public boolean bark = true;
    public static void main(String[] args) {
        Animal dog = new Dog();
        System.out.println(dog.bark);
        System.out.println(dog.feed);
        System.out.println(dog.weight);
    }
}
```

Which one is true?

A) true
true
0

B) Compile Time Error in System.out.println(dog.bark); and System.out.println(dog.feed);

C) Runs but no output

D) Run Time Error

1.

```
public class A {
    int i = 11;
    public void display() {
        System.out.println(i);
    }
}
class B extends A {
    int i = 12;
    public void display() {
        System.out.println(i);
    }
}
```

Which one is false?

A)
```
public class C {
    public static void main(String args[]) {
        B obj1 = new B();
        obj1.display();
        System.out.println(obj1.i);
    }
}
```
The output is 12
12

B)
```
public class C {
    public static void main(String args[]) {
        A obj2 = new B();
        obj2.display();
        System.out.println(obj2.i);
    }
}
```
The output is 12
11

C)
```
public class C {
    public static void main(String args[]) {
        A obj3 = new A();
        obj3.display();
        System.out.println(obj3.i);
    }
}
```
The output is 11
11

D)
```
class C {
    public static void main(String args[]) {
        B obj4 = new A();
        obj4.display();
        System.out.println(obj4.i);
    }
}
```
The output is 11
11

2.
```
public class A {
    void display() {
        System.out.println("Good");
    }
}
class B extends A {
    @Override
    **** void display() {
        System.out.println("Bad");
    }
}
```

Which one of the followings cannot be typed instead of "**" ?**

A) private
B) nothing
C) protected
D) public

3.
```
public class A {
    public A display() {
        return new A();
    }
}
class B extends A {
}
class C extends B {
    @Override
    public  ****  display() {
        return new C();
    }
}
```

Which ones of the followings can be typed instead of "**" ?**

A) A
B) B
C) C
D) None

4. Which ones are false for method overriding?

A)
```
public class A {
    private void fly(){
        System.out.println("A flies");
    }
}
public class B extends A {
    @Override
    public void fly(){
        System.out.println("B flies");
    }
}
```

B)
```
public class A {
    public final void fly(){
        System.out.println("A flies");
    }
}
public class B extends A {
    @Override
    public final void fly(){
        System.out.println("B flies");
    }
}
```

C)
```
public class A {
    public static void fly(){
        System.out.println("A flies");
    }
}
public class B extends A {
    @Override
    public static void fly(){
    System.out.println("B flies");
    }
}
```

D)
```
public class A {
    public int fly(){
        System.out.println("A flies");
        return 5;
    }
}
public class B extends A {
    @Override
    public byte fly(){
        System.out.println("B flies");
        return 7;
    }
}
```

5. Which ones are true to compare Overloading with Overriding?

A) For Overloading, method signature must be different but for Overriding method signature must be same.

B) static, private, and final methods cannot be overridden but they can be overloaded.

C) For Overriding, we need inheritance but for Overloading we do not need inheritance

D) For Overriding and Overloading, we have to modify codes inside the method body

6. Which ones are not method overriding?

A)
```
public class A {
    public int fly(int i){
        return 2*i;
    }
}
public class B extends A {
    public int fly(int i, int j){
        return i+j;
    }
}
```

B)
```
public class A {
    public int fly(int i){
        return 2*i;
    }
}
class B extends A {
    public int fly(short i){
        return i;
    }
}
```

C)
```
public class A {
    public int fly(){
        return 2;
    }
}
class B extends A {
    public short fly(){
        return 2;
    }
}
```

7.
```
public class Shape{
    public void draw(){
        System.out.println("Shape");
    }
    public void paint(){
        System.out.println("Shape painted");
    }
}
public class Circle extends Shape{
    public void draw(){
        System.out.println("Circle");
    }
}
public class Square extends Shape{
    public void draw(){
        System.out.println("Square");
    }
    public void paint(){
        System.out.println("Square painted");
    }
}
```

Which one is <u>false</u>?

A)
```
public class Main{
    public static void main(String aga[]){
        Shape c = new Circle();
        c.draw();
        c.paint();
    }
}
```
Prints Circle
Shape painted

B)
```
public class Main{
    public static void main(String aga[]){
        Shape s = new Square();
        s.draw();
        s.paint();
    }
}
```
Prints Square
Square painted

C)
```
public class Main{
    public static void main(String aga[]){
        Shape t = new Shape();
        t.draw();
        t.paint();
    }
}
```
Prints Shape
Shape painted

D) None

8. Which ones give Compile Time Error?

A)
```
public class Test06 {
    private void go() {
        System.out.println("Good");
    }
}
public class Test extends Test06 {
    @Override
    public void go() {
        System.out.println("Bad");
    }
    public static void main(String args[]) {
        Test obj = new Test();
        obj.go();
    }
}
```

B)
```
public class Test06 {
    private void go() {
        System.out.println("Good");
    }
}
public class Test extends Test06 {
    public void go() {
        System.out.println("Bad");
    }
    public static void main(String args[]) {
        Test obj = new Test();
        obj.go();
    }
}
```

C)
```
public class Test06 {
    public Integer go() {
        return 11;
    }
}
public class Test extends Test06 {
    @Override
    public Short go() {
        return 6;
    }
    public static void main(String args[]) {
        Test obj = new Test();
        obj.go();
    }
}
```

9. Which ones give Compile Time Error?

A)
```
public class Test06 {
    public int go() {
        return 11;
    }
}
public class Test extends Test06 {
    @Override
    protected int go() {
        return 12;
    }
    public static void main(String args[]) {
        Test obj = new Test();
        obj.go();
    }
}
```

B)
```
public class Test06 {
    int go() {
        return 11;
    }
}
class Test extends Test06 {
    @Override
    protected int go() {
        return 12;
    }
    public static void main(String args[]) {
        Test obj = new Test();
        obj.go();
    }
}
```

C)
```
public class Test06 {
    int go() {
        return 11;
    }
}
class Test extends Test06 {
    @Override
    byte go() {
        return 12;
    }
    public static void main(String args[]) {
        Test obj = new Test();
        obj.go();
    }
}
```

D)
```
public class Test06 {
    final int go() {
        return 11;
    }
}
class Test extends Test06 {
    @Override
    final int go() {
        return 12;
    }
    public static void main(String args[]) {
        Test obj = new Test();
        obj.go();
    }
}
```

10.

```
public class A extends B{
    int age = 11;
    public static String sing(){
        return "fa";
    }
    public static void main(String[] args){
        A a = new A();
        B b = new B();
        System.out.println(a.sing() + " " + b.sing());
        System.out.println(a.age + " " + b.age);
        }
    }
    class B {
        int age = 12;
        public static String sing(){
            return "la";
        }
    }
```

What is output?

A) fa la
11 12

B) la fa
11 12

C) fa la
12 11

D) fa fa
11 11

1.

```
public abstract class Ab01 {
    public int a = 10;
    public abstract void set(int a);
    public abstract void get();
}

public class Test extends Ab01{
    public void set(int a){
        this.a = a;
    }
    public static void main(String[] args){
        Test obj = new Test();
        obj.set(20);
        System.out.println(obj.a);
    }
}
```

Which one is true for the given code snippet?

A) The output is 20

B) The output is 10

C) Gives compile time error

D) Gives run time error

2.

```
public abstract class Ab01 {
    public int a = 10;
    public abstract void set(int a);
    public int get() {
        return a;
    }
}

public class Test extends Ab01{
    public void set(int a){
        this.a = a;
    }
    public static void main(String[] args){
        Test obj = new Test();
        obj.set(20);
        System.out.println(obj.get());
    }
}
```

Which one is true for the given code snippet?

A) The output is 20

B) The output is 10

C) Gives compile time error

D) Gives run time error

3. Knowledge: We cannot create objects from abstract classes.

Which ones of the followings give compile time error?

A)
```
public class Ab01 {
    public int a = 10;
    public abstract void set(int a);
    public int get() {
        return a;
    }
}
```

B)
```
public abstract class Ab01 {
    public int a = 10;
    public int get() {
        return a;
    }
}
```

C)
```
public abstract class Ab01 {
    public int a = 10;
    public abstract void set(int a);
    public int get();
}

public class abstract Test extends Ab01{
    public void set(int a){
        this.a = a;
    }
    public static void main(String[] args){
    }
}
```

D)
```
public abstract class Ab01 {
    public int a = 10;
    public abstract void set(int a);
    public int get() {
        return a;
    }
    public static void main(String[] args) {
        Ab01 obj = new Ab01();
    }
}
```

4. Which ones of the followings give compile time error?

A)
```
public abstract class Ab01 {
    public int a = 10;
    public abstract void set(int a);
    public abstract int get() {
        return a;
    }
}
```

B)
```
public abstract class Ab01 {
    public int a = 10;
    public abstract void set(int a);
    public int get();
}
```

C)
```
public class Ab01 {
    public int a = 10;
    public abstract void set(int a);
    public int get() {
        return a;
    }
}
```

D)
```
public abstract class Ab01 {
    public int a = 10;
    public void set(int a) {
        this.a = a;
    }
    public int get() {
        return a;
    }
}
```

5. **Which one is false for abstraction?**

A) If we extend to an abstract class and do not implement all the abstract methods, then the child class should also be marked as abstract.

B) A class can be made abstract without any abstract method

C) A non-abstract class cannot have abstract methods but an abstract class can have non-abstract methods.

D) Abstract class is a class so we can create object from an abstract class.

6.
```
public abstract class Ab01 {
    int b = 12;
    abstract void getNumber(int x, int y);
}
public class Test extends Ab01 {
    int b = 10;
    Test() {
        b = super.b;
    }
    void getNumber(int x, int y) {
        int i = x * y + b;
        System.out.print(i);
    }
    public static void main(String[] args) {
        Test sub = new Test();
        sub.getNumber(7, 3);
    }
}
```

What is the output?

A) 33

B) 31

C) Gives compile time error

D) Gives run time error

7. public abstract class Y { public int method(){ return 5; } }
public class Z { public abstract void method(); }
public abstract class T { }
public class U { }

Which one/ones give compile time error?

A) Z
B) Y
C) Y, Z
D) U, T, Z

8. 1) A school has 6th, 7th, and 8th grade classes.
2) Math and English classes are mandatory for all with different contents.
3) Art is elective for all with same content.

Which one is the best according to the given scenario?

A) School class will be abstract parent class.
Math and English will be abstract methods.
Art will be concrete method.

B) School class will be abstract parent class.
Math, English, and Art will be abstract methods.

C) School class will be concrete parent class.
Math, English, and Art will be concrete methods.

D) School class will be concrete parent class.
Math and English will be abstract methods.
Art will be concrete method.

9.
```
abstract class A{
    abstract void firstMethod();
    void secondMethod(){
        System.out.println("SECOND");
        firstMethod();
    }
}
abstract class B extends A{
    @Override
    void firstMethod(){
        System.out.println("FIRST");
    }
    abstract void thirdMethod();
}
class C extends B{
    @Override
    void thirdMethod(){
        System.out.println("THIRD");
    }
}
public class MainClass{
    public static void main(String[] args){
        C c = new C();
        c.firstMethod();
        c.secondMethod();
        c.thirdMethod();
    }
}
```

What is the output?

A) FIRST
SECOND
FIRST
THIRD

B) FIRST
SECOND
THIRD

C) SECOND
FIRST
FIRST
THIRD

D) SECOND
FIRST
THIRD

10.
```
public abstract class A {
    abstract int getSum();
    abstract int getSum(int x);
    abstract int getSum(int x, int y);
}

class Sub extends A {
    int x = 4;
    int getSum(){
        return x + x;
    }
    int getSum(int x, int y){
        int z = x + y;
        System.out.print(z);
        return z;
    }
    public static void main(String[] args){
        A sub = new Sub();
        sub.getSum(4,2);
    }
}
```

Which ones are true for the given code?

A) No compile time error and the output is 6

B) We can change concrete Sub class to abstract class to fix the compile time error.

C) We can override one of the getSum method in the Sub class to fix the compile time error.

D) We can remove one of the getSum method from class A to fix the compile time error.

1.
```
public interface Animal {
    int x = 5;
    abstract void eat();
}
public interface Mammal {
    int x = 7;
    void eat();
}
```

Which one is true for the given code?

A)
```
public class Cat implements Animal, Mammal{
    public static void main(String[] args) {
        Cat cat = new Cat();
        System.out.println(Animal.x);
        cat.eat();
    }
    @Override
    public void eat() {
        System.out.println("Cats like cheese");
    }
}
```

The output is

5

Cats like cheese

B)
```
public class Cat implements Animal, Mammal{
    public static void main(String[] args) {
        Cat cat = new Cat();
        System.out.println(Animal.x);
        cat.eat();
    }
    @Override
    public void eat() {
        System.out.println("Cats like cheese");
    }
}
```

Gives Compile Time Error because there are two eat() methods, Java cannot decide which to select

C)
```
public class Cat implements Animal, Mammal{
    public static void main(String[] args) {
        Cat cat = new Cat();
        System.out.println(Animal.x);
        cat.eat();
    }
    @Override
    public void eat() {
        System.out.println("Cats like cheese");
    }
}
```

Gives Compile Time Error because there are two x variables, Java cannot decide which to select

2. Which ones give compile time error?

A)
```
public interface I02 {
    default void add() {
        System.out.println("Makes addition");
    }
}
```

B)
```
public interface I02 {
    static void add() {
        System.out.println("Makes addition");
    }
}
```

C)
```
public interface I02 {
    void add() {
        System.out.println("Makes addition");
    }
}
```

D)
```
public interface I02 {
    default void add();
}
```

3.
```
interface Animal {
    int height = 10;
}
interface Mammal {
    int height = 12 ;
    int weight = 300;
}
```

Which one is <u>false</u>?

A)
```
public class Cat implements Animal, Mammal {
    public static void main(String args[]){
        System.out.println(Animal.height);
    }
}
```
Output is 10

B)
```
public class Cat implements Animal, Mammal {
    public static void main(String args[]){
        System.out.println(Mammal.height);
    }
}
```
Output is 12

C)
```
public class Cat implements Animal, Mammal {
    public static void main(String args[]){
        System.out.println(weight);
    }
}
```
Gives compile time error

D)
```
public class Cat implements Animal, Mammal {
    public static void main(String args[]){
        System.out.println(Mammal.weight);
    }
}
```
Output is 300

4.
```
public interface A {
    void myMethod();
}
public class B {
    public void myMethod() {
        System.out.println("Good");
    }
}
public class C extends B implements A {
}
public class Test01 {
    public static void main(String[] args) {
        A a = new C();
        a.myMethod();
    }
}
```

Which one is true?

A) Gives compile time error
B) Output is Good
C) Gives run time error
D) Nothing is displayed on the console

5.
```
public interface I02{
    void myMethod();
}
public class Test02 implements I02{
    void myMethod(){
        System.out.println("Good");
    }
}
```

Given code gives compile time error because ...

A) Interface methods must be implemented as public. Because, interface methods are public by default and you should not reduce the visibility of any methods while overriding.
B) Interface variables are public, static and final by default and you can't change their values once they are initialized.
C) An interface can extend another interface not the class.
D) Interfaces can't have constructors.

6.
```
public interface I02{
    int i = 12;
}
public class Test02 implements I02{
    void myMethod(){
        i = 13;
    }
}
```

Given code gives compile time error because ...

A) Interface variables are public, static and final by default and you can't change their values once they are initialized.

B) Interface methods must be implemented as public. Because, interface methods are public by default and you should not reduce the visibility of any methods while overriding.

C) An interface can extend another interface not the class.

D) Interfaces can't have constructors.

7.
```
public class D implements E {
    public int methodB(int i) {
        return i = i * i;
    }
}
interface E {
    int methodB(int i);
}
public class Test03 {
    public static void main(String[] args) {
        E b = new D();
        System.out.println(b.methodB(5));
    }
}
```

What is the output?

A) 25

B) 5

C) Compile Time Error

D) Run Time Error

8.
```
interface K {
    String a = "Awesome";
    String mA();
}
interface L extends K {
    String b = "Bad";
    String mB();
}
class M implements K, L {
    public String mA() {
        return a + " " + b;
    }
    public String mB() {
        return b + " " + a;
    }
}
public class Test02 {
    public static void main(String[] args) {
        M m = new M();
        System.out.println(m.mA());
        System.out.println(m.mB());
    }
}
```

What is the output?

A) Awesome Bad
Bad Awesome

B) Awesome Bad
Awesome Bad

C) Bad Awesome
Bad Awesome

D) Compile Time Error

9.
```
interface InfB {
    int x = 3;
    int myMethod();
}
interface InfA extends InfB{
    int x = 7;
    int y = 9;
    int myMethod();
}
class MyClass implements InfA{
    int x = 5;
    public int myMethod(){
        return x;
    }
```

Which one is <u>false</u> ?

A)
```
public static void main(String[] args){
    InfA obj = new MyClass();
    System.out.print(obj.myMethod());
}
```
The output is 5

B)
```
public static void main(String[] args){
    InfA obj = new MyClass();
    System.out.print(InfA.x);
}
```
The output is 7

C)
```
public static void main(String[] args){
    MyClass mc = new MyClass();
    System.out.print(mc.y);
    System.out.print(mc.myMethod());
}
```
The output is 95

D)
```
public static void main(String[] args){
    System.out.print(y);
    System.out.print(x);
}
```
The output is 97

10. Which ones give Compile Time Error?

A)
```
interface B {
    protected int x = 3;
}
```

B)
```
interface B {
    public static final int x = 3;
}
```

C)
```
interface B {
    protected int m();
}
```

D)
```
interface B {
    default int m() {
        return 1;
    }
}
```

E)
```
interface B {
    private static int m() {
        return 1;
    }
}
```

1. Which ones are true according to the given image?

A) LinkedList has 2 interface parents.

B) PriorityQueue class implements Queue interface

C) Set interface extends to Collection interface.

D) TreeSet class must override all abstract methods in Set interface.

2. Which one is true according to the given image?

A) Queue interface must override all methods in Collections interface.

B) Queue obj1 = new Queue();
Given code can create an object.

C) SortedSet obj2 = new TreeSet();
Given code can create an object.

D) ArrayList<String> obj3 = new LinkedList<>();
Given code can create an object.

3. Which ones are true according to the given image?

A) List<String> list1 = new LinkedList<>();

B) Queue<String> list2= new LinkedList<>();

C) Collection<String> list3= new LinkedList<>();

D) LinkedList<String> list4= new LinkedList<>();

4. Which ones are true?

A) Each element in the LinkedList is called the Node.
Each Node of the LinkedList contains two items:
1) Data/Value of the element
2) Pointer/Address/Reference to the Next Node in the LinkedList.

B) Head of the LinkedList only contains the Address of the First element of the List.

C) The Last element of the LinkedList contains null in the pointer part of the node because it is the end of the List so it doesn't point to anything.

D) Insert and delete operations in the Linked list are not performance wise expensive because adding and deleting an element from the linked list does't require element shifting, only the pointer of the previous and the next node requires change.

5. Knowledge:

1) addFirst() method in Java is used to insert a specific element at the beginning of a LinkedList.

2)addLast() method in Java is used to insert a specific element at the end of a LinkedList.

```
LinkedList<String> linkedList = new LinkedList<>();
linkedList.add("A");
linkedList.add("B");
linkedList.add("C");
linkedList.add("B");
linkedList.add("D");
```

Which one is true?

A) linkList.remove(2);
Deletes B from the list

B) linkedList.add(1, "Ali"); and linkedList.addFirst("Ali");
do the same thing.

C) linkedList.addLast("Veli"); and linkedList.add("Veli");
do the same thing

D) linkedList.remove() and linkedList.removeLast() do the same thing

6. **Which scenarios are good to use linked lists?**

A) You need a list for daily museum visitors

B) You need a list for the names of cities in a country

C) You need a list for zip codes

D) You need a list for warehouse products

7. LinkedList<String> linkedList = new LinkedList<>();
linkedList.add("A");

linkedList.add("B");

linkedList.add("C");

linkedList.add("B");

Which ones are true?

A) linkedList.removeLastOccurrence("B");
System.out.println(linkedList);
Prints [A, B, C] on the console

B) System.out.println(linkedList.get(2));
Prints C on the console.

C) Collections.sort(linkedList);
System.out.println(linkedList);
Prints [C, B, B, A] on the console

D) linkedList.set(0, "X");
System.out.println(linkedList);
Prints [X, A, B, C, B] on the console

8.
```
public class Test02 {
    public static void main(String[] args) {
        LinkedList<String> sll = new LinkedList<>();
        sll.add("B");
        sll.add("A");
        sll.addFirst("B");
        sll.addFirst("C");
        sll.add("B");
    }
}
```

Which ones are true?

A) `System.out.println(sll);`
Prints [C, B, B, A, B] on the console

B) `sll.removeFirstOccurrence("B");`
`System.out.println(sll);`
Prints [C, B, A, B] on the console

C) `sll.removeLastOccurrence("B");`
`System.out.println(sll);`
Prints [C, B, B, A] on the console

D) `System.out.println(sll.getLast() + sll.getFirst() + sll.get(2));`
Prints BCB on the console

9. Which ones have the same output?

A)
```
public static void main(String[] args) {
    List<String> m = new ArrayList<>();
    m.add("B");
    m.add("C");
    m.add("A");
    Collections.sort(m);
    for(int i = m.size()-1; i>=0; i--) {
        System.out.print(m.get(i) + " ");
    }
}
```

B)
```
public static void main(String[] args) {
    List<String> m = new ArrayList<>();
    m.add("B");
    m.add("C");
    m.add("A");
    Collections.sort(m);
    Collections.reverse(m);
    for(int i = 0; i<m.size(); i++) {
        System.out.print(m.get(i) + " ");
    }
}
```

C)
```
public static void main(String[] args) {
    List<String> m = new ArrayList<>();
    m.add("B");
    m.add("C");
    m.add("A");
    Collections.reverse(m);
    for(int i = 0; i<m.size(); i++) {
        System.out.print(m.get(i) + " ");
    }
}
```

10. public static void main(String[] args) {

```
LinkedList<String> c1= new LinkedList<String>();
c1.add("Red");
c1.add("Green");
c1.add("Black");
c1.add("White");
c1.add("Pink");
```

}

Which ones are true?

A) System.out.println(c1);
prints [Red, Green, Black, White, Pink] on the console

B) System.out.println(c1.isEmpty());
prints false on the console

C) c1.removeAll(c1);
System.out.println(c1);
prints [ ] on the console

D) System.out.println(c1.removeAll(c1));
prints false on the console

1.
```
public class Test01 {

    public static void main(String[] args) {

        Queue<Integer> queue = new LinkedList<>();
        queue.add(3);
        queue.add(5);
        queue.add(7);
        queue.add(9);
        queue.add(11);
        queue.add(13);

        int count = 0;
        while (queue.isEmpty() == false) {
            queue.remove();
            count++;
            if(count == 3) {
                break;
            }
        }
        System.out.println(queue);
    }
}
```

What is the output?

A) [9, 11, 13]

B) [3, 5, 7]

C) [11, 13]

D) [7, 9, 11, 13]

2.
```
public class Test02 {
    public static void main(String[] args) {
        TreeSet<String> tSet = new TreeSet<>();
        tSet.add("C");
        tSet.add("B");
        tSet.add("C");
        tSet.add("A");
        for (String w : tSet){
            System.out.print(w + " ");
        }
    }
}
```

What is the output?

A) A B C

B) C B A

C) C B C A

D) A B C C

3. **Which ones are true?**

A) When you need a collection to add new elements and remove existing elements mostly, you need to use LinkedList.

B) When you need a collection which has unique elements in natural order, create a HashSet, add the elements then convert the HashSet to a TreeSet.

C) When you need a collection to update existing elements mostly, you need to use ArrayList.

D) When you need a collection which has unique elements in insertion order, you need to use HashSet.

4. 1) Does not allow duplication
2) Allows null values
3) The fastest to create and add elements
4) The elements are in random order

The following features describe which one of the followings?

A) HashSet
B) LinkedHashSet
C) PriorityQueue
D) LinkedList

5. **Which ones are true?**

A) The remove() and poll() methods both remove and return the head of the queue.
B) Both element() and peek() methods return the head of the queue without removing.
C) If the queue is empty, element() throws "NoSuchElementException", while peek() returns null.
D) If the queue is empty, remove() throws "NoSuchElementException", while poll() returns null.

6. Knowledge: ArrayList uses indexes but Queue does not.

Which ones are true?

A) When you need a collection to remove the element which is inserted first easily, you need to use Queue
B) Queues are very good at adding and removing elements, but bad if you need to search through them. ArrayLists, on the other hand, are a bit slower to add elements, but allow easy random access.
C) Queue<String> q = new PriorityQueue<>();
q.add("Teddy");
q.add("Mark");
q.add("Leo");
q.remove(); removes Leo form the q

7.
```
public class Test05 {
    public static void main(String[] args) {
        HashSet<String> hSet = new HashSet<>();
        hSet.add("Z");
        hSet.add("Y");
        hSet.add("X");
        hSet.add("X");
        System.out.println(hSet);//A
        TreeSet<String> tSet = new TreeSet<>(hSet);
        System.out.println(tSet);//B
    }
}
```

Which one is true?

A) A is definitely [X, Y, Z]

B) B is definitely [X, Y, Z]

C) A can be [X, X, Y, Z]

D) B can be [X, X, Y, Z]

8. **Which ones are true?**

A) Uniqueness of elements ==> HashSet, TreeSet, LinkedHashSet

B) Insertion order ==> ArrayList, LinkedList, LinkedHashSet

C) FIFO ==> Queue

D) Fast in adding and removing elements LinkedList, HashSet

9.
```
public class Test01 {
    public static void main(String[] args) {
        HashSet<String> hs = new HashSet<>();
        hs.add("A");
        hs.add("B");
        hs.add("A");
        hs.add(null);
        hs.add(null);
        System.out.println(hs);
    }
}
```

Which one of the followings can be the output?

A) [null, A, B]

B) [null, null, A, B]

C) [null, A, A, B]

D) [null, null, A, A, B]

10. Which ones are true?

A) Sets can contain duplicate values but Lists cannot. Lists allow only unique elements.

B) List allows retrieval of data to be in same order as it is inserted but HashSet does not ensure the sequence in which the data can be retrieved

C) Hashing technique creates unique codes for every data

D) HashSet is the slowest Set

1. Map<String, String> map1 = new HashMap<String, String>();

```
map1.put("A", "Apple");
map1.put("B", "Ball");
map1.put("C", "Cat");
map1.put("A", "Gun");
map1.put("B", "Kite");
map1.put("A", "Mat");
```

According to the given HashMap, which ones are true?

A) System.out.println(map1.get("A"));
Output is "Apple"

B) System.out.println(map1.get("B"));
Output is "Kite"

C) System.out.println(map1.get("C"));
Output is "Cat"

D) System.out.println(map1.values().size() + map1.keySet().size());
Output is 6

2. **Which ones are true for Maps?**

A) HashMap does not maintain any order among its elements and especially, it does not guarantee that the order will remain constant over time.

B) HashMap permits a null key and multiple null values.

C) In HashTable, neither the key nor the value can be null.

D) HashTable is thread-safe and synchronized but HashMap is not.

3. **Which ones are true for HashMaps in Java?**

A) The capacity denotes how many entries HashMap can store, and size denotes how many mappings or key/value pair is currently present.

B) There is no maximum limit for HashMap, you can store as many entries as you want

C) HashMap doesn't provide any ordering guarantee for keys, values, or entries.

D) HashMap is not a thread-safe in Java. You should not share a HashMap with multiple threads if one or more thread is modifying the HashMap

4. If you want

a)Multiple nulls in values

b)No null in keys

c)Elements sorted in natural order by keys

which one is the option to use?

A) TreeSet

B) HashMap

C) HashTable

D) TreeMap

5. Hashtable<Integer, String> hTable = new Hashtable<>();

hTable.put(100, "Ali");

hTable.put(101, "B");

hTable.put(102, "Cem");

Which one is <u>false</u>?

A) hTable.put(null, "G");
throws "NullPointerException"

B) hTable.put(103, null);
throws "NullPointerException"

C) hTable.contains("Cem")
return true

D) hTable.getOrDefault(104, "No key")
return null

6. Hashtable<Integer, String> hTable = new Hashtable<>();
hTable.put(100, "Ali");
hTable.put(101, "B");
hTable.put(102, "Cem");

Which ones are false?

A) hTable.replace(102, "Cem", "XXX");
System.out.println(hTable);
The output can be like;
{102=XXX, 100=Ali, 101=B}

B) System.out.println(hTable.replace(104, "Y", "M"));
prints "false" on the console

C) TreeMap<Integer, String> tm = new TreeMap<>();
tm.put(103, "Tom");
tm.put(104, "Hanks");
tm.put(null, "Brad");
tm.put(102, null);
System.out.println(tm);
prints {null=Brad, 102=null, 103=Tom, 104=Hanks}

D) System.out.println(hTable.containsKey(102)); and
System.out.println(hTable.containsValue(101));
prints "true" on the console