



# Institute of Software Engineering

## Graduate Diploma in Software Engineering

### ITS1010 - Programming Fundamentals – Assignment 02

Answer all the questions and submit your attempt on or before the given date.

1. What is the difference between print() and println()? Explain your answer with suitable examples.
2. Write a Java program to print both name and address in several lines.
3. Briefly explain the types of Java literals. Explain your answer with suitable examples.
4. Write a Java program to obtain the following result.
 

```

      *
      * *
      * * *
      * * * *
      * * * * *
```
5. Write a Java program to obtain the following result.
 

```

      *
      **
      ***
      ****
      *****
```
6. Write a Java program to obtain the following result.
 

```

          *
        * *
       *  *
      *    *
     *      *
    *        *
   *
```
7. Write a Java program to accomplish the following tasks in one.
  - a. Declare an integer variable named as "i".
  - b. Initialize the variable as 100.
  - c. Declare another variable "age" and initialize it dynamically, as 20.
  - d. Print the value of age ("The age is ....").
8. Write a Java program to print the total of two integer numbers input by the keyboard.
9. Write a Java program create 2 variables as integers, named x, y and assign values in the same statement
  - a. Print the values as x, y format (eg: if x is 10 and y is 20 output should be 10 20)
  - b. Print the values in y, x format.
10. Write a Java program using the help of the "Scanner",
  - a. Input two values and store them in two variables.
  - b. Print the values as they assign to the variable and finally print them as "Values are ..."
11. Write one Java program to accomplish the given task.
  - a. Declare 4 variables using only ONE statement. (variable names: Computing, Maths, Science, English)
  - b. Initialize the 4 variables. (Use a value from 1 to 100)
  - c. Declare another Integer variable as total, and sum up the 4 variables and add to the total.
  - d. Print the total ("The total is ...")
  - e. Write a print statement, which prints the total by not using the total variable or any other variable except the given 4 variables.
  - f. Print the four variables keeping space between them. (20 10 30 40)
  - g. Declare a variable "average" as double and initialize it as 0.0.
  - h. Find the average of the 4 variables and store them in the variable "average".
  - i. Print the average as ("The Average is ....").
12. Write a Java program to convert inches to millimetres. The conversion formula is "1mm=inch x 25.4".

13. Write a Java program to convert ounces to grams.  
The conversion formula is "gram =ounce x 28.3495".

14. Write a Java program to accomplish the following task.

- Input your age.
- Store it in an integer variable named "age"
- Find your age after 3years (No additional variables can be used).
- Print the new age as "New age : "

15. Write a Java program to input marks for 10 subjects find the total and average.

The result must be as follows.

```
Marks [34, 45, 62, 34, 23, 89, 56, 45, 67, 56]
Total   :511
Average :51.1
```

16. Which of the followings can be legally inserted at line 12? Explain your answer.

```
class Example{
    public static void main(String args[]){
        int x;
        //Insert code here //Line 12
        System.out.println(x);
    }
}
```

- A. int y;    B. int x;  
C. y=100;   D. x=200;  
E. Insert nothing

17. Which of the followings can be legally inserted at line 12? Explain your answer.

```
class Example{
    public static void main(String args[]){
        //Insert code //Line 12
        System.out.println(x);
        System.out.println(y);
    }
}
```

- A. int x,y;                      B. int x=10,y;  
C. int x=10,y=20;               D. int x=y=10;  
E. int x,y=20;                  F. int x=10,y=20,z=30

18. What is the result of attempting to compile and run the program?

```
class Example{
    public static void main(String args[]){
        System.out.print("A\nB");
        System.out.println("CD");
        System.out.print("\nEF\n");
    }
}
```

```
System.out.print("G\nH");
```

```
    }
}
```

19. What will be the output when you compile and run the following program?

```
class Example{
    pubic static void main(String args[]){
        System.out.println(10+20+30);
        System.out.println("10+20+30");
        System.out.println("10+20"+30);
        System.out.println("10"+"20"+"30");
        System.out.println("10"+20+30);
        System.out.println(10+20+"30");
        System.out.println(10+"20"+30);
    }
}
```

20. Which of the following lines are valid statements?

Explain your answers.

```
class Example{
    public static void main(String args[]){
        System.out.println(0B11100100); //Line 1
        System.out.println(0b11100100); //Line 2
        System.out.println(0B11100200); //Line 3
        System.out.println(0144);        //Line 4
        System.out.println(0148);        //Line 5
        System.out.println(0x64);        //Line 6
        System.out.println(0xabc);       //Line 7
        System.out.println(0xabcg);      //Line 8
        System.out.println(0X);         //Line 9
        System.out.println(0Xffffff);    //Line 10
    }
}
```

21. Write a Java statement to accomplish each of the following tasks:

- Declare variables sum and x to be of type int.
- Assign 1 to variable x.
- Assign 0 to variable sum.
- Add variable x to variable sum, and assign the result to variable sum.
- Print "The sum is: ", followed by the value of the variable sum.

22. Write Java statements to get following output  
(Only one sout statement can be used)

- Java is a typed language
- AB"CB
- AB\CD
- C:\Windows\Program
- AB\"CD
- AB\\\"CD
- AB\nCD

h. AB\tCD

i. AB\bCD

23. Which of the followings can be legally inserted at line 12? Explain your answer.

```
class Example{
    public static void main(String args[]){
        int x;
        //Line 12
        System.out.println(x);
    }
}
```

- A. x+1;                      B. x=100;  
C. int y=100                D. int x=200;  
E. Insert nothing.

24. Write a Java program to get the following output using a single "System.out.println()"

**ABC****XYZ****PQR**

25. What is the result of attempting to compile and run the program?

```
class Example{
    public static void main(String args[]){
        int x=10,y=20,z=30;
        System.out.println(x);
        System.out.println(y);
        System.out.println(z);
        int y=200;
        System.out.println(y);
    }
}
```

26. Write a Java program to get the following output.  
|"/"\""/"\"|

27. Write a Java program to get the following output.  
"+"\""/"+"\""+\"\\n"+"\\n"

28. Write a Java program to get the following output using a single "System.out.println()"

**Name : Niroth****Total : 673****Average: 67.3****Grade : B**

29. Which of the following lines are valid declarations? Select the three correct answers.

- a. char a = '\u0061';  
b. char 'a' = 'a';

c. char \u0061 = 'a';

d. ch\u0061r a = 'a';

e. ch'a'r a = 'a';

30. What is the result of attempting to compile and run the program?

```
class Example{
    public static void main( String args[] ){
        int x,y,z;           //line 1
        x=y=z=10;           //line 2
        int a=12,b,c=4;      //line 3
        int p=10;            //line 4
        int q=p;             //line 5
        int i=j=k=10;        //line 6
    }
}
```

- a. Compile error at line 2  
b. Compile error at line 3  
c. Compile error at line 5  
d. Compile error at line 6  
e. None of the above

31. Which are valid declarations? (Choose all that apply.)

- a. int \$x;  
b. int 123;  
c. int \_123;  
d. int #dim;  
e. int %percent;  
f. int \*divide;  
g. int sales\_ Summer\_2005\_gross\_sales; \_

32. What is the result of attempting to compile and run the program?

```
class Example{
    public static void main(String args[]){
        int x,y,z;
        System.out.println(x+y+z);
    }
}
```

- a. prints : nothing  
b. prints : undefined value  
c. prints null.  
d. Runtime error  
e. Compile-time error  
f. None of the above

33. What is the result of attempting to compile and run the program?

```
class Example{
    public static void main(String args[]){
        int x;
        System.out.println(x);
    }
}
```

- a. prints : nothing
- b. prints : x
- c. prints : 100
- d. Runtime error
- e. Compile time error

34. What will be the result of attempting to compile and run the following program?

```
class Example {
    public static void main(String[] args) {
        System.out.println(0x10 + 10 + 010);
    }
}
```

Select the one correct answer.

- a. The program will not compile. The compiler will complain about the expression "0x10 + 10 + 010."
- b. When run, the program will print 28.
- c. When run, the program will print 30.
- d. When run, the program will print 34.
- e. When run, the program will print 36.
- f. When run, the program will print 101010.

35. Compile time error is generated at which line?

```
class Example{
    public static void main(String args[]){
        char a = '\c'; // Line 1
        char b = '\r'; // Line 2
        char c = '\"; // Line 3
        char d = '\b'; // Line 4
        char e = "\"; // Line 5
    }
}
```

- a. Line 1
- b. Line 2
- c. Line 3
- d. Line 4
- e. Line 5
- f. None of the above

36. What is the output for the following code fragment and explain your answer?

- A. System.out.println(1+2+3);
- B. System.out.println("1"+"2"+"3");
- C. System.out.println('1'+2+'3');
- D. System.out.println('1'+ " "+2+" "+'3');
- E. System.out.println('A'+B+'C');
- F. System.out.println("A"+"B"+"C");
- G. System.out.println('A'+100+200);
- H. System.out.println('A'+ " "+B+" "+'C');

37. What will be the outputs when you compile and run the following program and explain your answer line by line?

```
class Example{
    public static void main(String asrg[]){
        char a='a';
        System.out.println(a=='\u0061');
        System.out.println("\u0061=='\u0061');
```

```
System.out.println("\u0061==97);
\u0061='\u0041';
System.out.println('A=='\u0041');
System.out.println(65=='\u0041');
System.out.println(65==a);
System.out.println("\u0041'==a);
```

```
}
```

```
}
```

38. Which are valid declarations and explain why?

- a. System.out.println(0B1010);
- b. System.out.println(B1010);
- c. System.out.println(0B01010);
- d. System.out.println(01010);
- e. System.out.println(0x1010);
- f. System.out.println(01012);
- g. System.out.println(0B1012);

39. Complete the following program?

```
import java.util.*;
class Example{
    public static void main(String args[]){
        Scanner input=new Scanner(System.in);
        System.out.print("Input your age : ");
        int age=input.nextInt();
        System.out.println("Your current age is : "+age);
        //-----Do not modify before this line----
        //your are allowed to insert any code here to
        //increment the age by 10
        //-----Do not modify after this line---
        System.out.println("Your age after 10 years is : "
                           +age);
    }
}
```

40. Complete the following program?

```
import java.util.*;
class Example{
    public static void main(String args[]){
        Scanner input=new Scanner(System.in);
        System.out.print("Input number 1 : ");
        int num1=input.nextInt();
        System.out.print("Input number 2 : ");
        int num2=input.nextInt();
        System.out.println(num1+" "+num2);

        //-----Do not modify before this line-----
        //Insert Java code(s) here to swap the two
        //variables "num1" and "num2"
        //as an example when you input 10 for
        //num1 and 20 for num2, then
        //the first output should be "10 20" and the
        //second output "20 10"
        //-----Do not modify after this line-----
        System.out.println(num1+" "+num2);
    }
}
```