**Practice Questions**

**Theoretical**

1. What is the difference between “System.out.print()”, “System.out.println()” and “System.out.printf()”?

What is “System.out” in the syntax?

1. What distinguishes the main() method from other methods in Java? What is “String[] args” inside main() function? What is the purpose of this?
2. What do the sizes of the different primitive datatypes mean?
3. Why Java comes with Wrapper Classes corresponding to the primitive data types?
4. What is the use of “static” keyword in Java? Give real life examples of situations where you should use static fields and static methods.
5. What is the use of “final” keyword in Java? Give real life examples of situations where you need final fields and final methods.
6. Can static methods use non-static fields? Can they use this or super keywords? If yes, Give example. If no, explain why.
7. What is meant by abstract methods? Give one real-life example where you need to use abstract methods.
8. Can abstract methods be static? If yes, give example. If no, explain why.
9. What is method overloading and method overriding? Give examples of real-life situations where method overloading is required, and where method overriding is required. Point out the differences.
10. Can static methods be overridden? If yes, give example. If no, explain why.
11. What is the use of constructors in Java?
12. How many types of constructors are there in Java? Give example of each type.
13. What happens when you create a parameterized constructor but no default constructor?
14. What is constructor chaining? When you should use it?
15. What is “this” keyword in Java? What are its uses?
16. There are different ways of array declaration and initialization in Java. Are they all same or is there any difference?
17. Explain the bitwise logic operators and shifting operators in Java with examples. Think about some real-life situations, where these operators may become handy.
18. Explain the concept of type conversion in Java.
19. What is Integer caching?
20. What is the difference between if-else ladder and switch case in Java? In real life situations, which one is preferable and when/why?
21. What are the different kinds of loops in Java? Think about different kinds of real-life situations where each one of them is preferred more compared to others.
22. What happens if we don’t use the condition checking in while() or do-while()?
23. What happens if any condition is not there in the for() loop? What happens if we skip the increment or decrement of counter in for()?
24. What is the difference between “continue” and “break”? Can the roles be switched? (i.e., instead of “break”, use “continue” but the result is same and instead of “continue”, use “break” but the result is same as intended)

**Practical**

1. Write a Java function that takes two numbers as inputs and swaps them. First try using a third variable, then try without using that.
2. Write a Java program to check if a vowel is present in a string.
3. Write a Java program to check whether an entered number is prime or composite?
4. Write a Java program to sort an entered array.
5. Write a Java program to print the factorial of a given number. (With and without using recursion)
6. Implement Binary Search in Java.
7. Write a Java program that takes an array of integers as input and then prints the maximum number.

Change the program so that it prints the second maximum number in the array.

1. Write a Java program that checks whether two arrays of same size contain the same elements.
2. Write a Java program that takes an integer as input and returns the corresponding form in base 3.
3. Write a Java function that checks whether a given string is a Palindrome or not.