

Final Examination: Major Test

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**Short answer type questions**

**Attempt Any 10 Questions. 2\*10=20**

1. What is the default value of an int variable in Java?

**Answer :** The default value of an int variable in Java is **0**.

1. Which method is used to get the length of a string in Java?

**Answer = .length();**

1. What is the use of the final keyword in Java?

**Answer = the final keyword is used to restrict modification and enforce immutability**

1. What is the parent class of all classes in Java?

**Answer = Object class**

1. What does the static keyword mean in Java?

**Answer = the static keyword signifies that a member (variable, method, block, or nested class) belongs to the class itself, rather than to any instance (object) of that class**

1. How do you define a constant in Java?

**Answer = public static final datatype CONSTANT\_NAME = value;**

1. What is the difference between == and equals() in Java?
2. What is method overloading in Java?

**Answer = class consists of more than one method with same name and different arguments is called method overloading;**

1. What is the difference between a constructor and a method?

**Answer =**

**Constructor: Initializes a newly created object of a class. It allocates memory for the object and sets its initial state.**

**Method: Performs specific actions or computations on an existing object.**

**10.**What is a JVM in Java?\

**Answer = In Java, JVM stands for Java Virtual Machine. It's a crucial component of the Java platform that enables Java's "write once, run anywhere" capability**

**11.** What is the use of the super keyword in Java?

**Answer = the super keyword is used to refer to the superclass (parent class) of the current class.**

**12.**What is an abstract class in Java?

**Answer = An abstract class in Java is a class that cannot be instantiated directly and serves as a blueprint for other classes, defining common attributes and behaviors**

**13.**What is the significance of the this keyword in Java?

**Answer = the this keyword refers to the current object within a class**

**14.**What is a package in Java?

**Answer = a package is a way to organize related classes and interfaces into a namespace**

**15.**What is garbage collection in Java?

**Answer = Garbage collection in Java is an automatic memory management process that reclaims memory occupied by objects that are no longer in use by the program**

**16.**How do you handle exceptions in Java?

**Answer = Using Try Catch finally Block or using throws keyword**

**17.**What is the return type of the hashCode() method in Java?

**Answer = int**

**18.**What is an interface in Java?

**Answer = an interface is a blueprint or contract that defines a set of methods a class must implement, promoting abstraction, polymorphism, and loose coupling**

**19.**What is the main difference between an Array and an ArrayList in Java?

**Answer = The main difference between an Array and an ArrayList in Java is their size and flexibility**

**20.**What is multithreading in Java?

**Answer = Multithreading in Java is a capability that allows a program to execute multiple parts (called threads) concurrently, leading to improved performance and responsiveness, especially in applications with tasks that can run independently.**

# Practical Question

**Attempt Any 10 Questions. 5\*10=50**

1. Write a Java program to check if a number is even or odd.
2. Write a program to find the sum of all elements in an array.
3. Write a Java program to find the factorial of a number.
4. Write a program to check if a string is a palindrome or not.
5. Write a Java program to print the Fibonacci series up to a given number.
6. Write a Java program to reverse an array.
7. Write a program to check if a number is prime.
8. Write a Java program to swap two numbers using a third variable.
9. Write a Java program to find the largest of three numbers.
10. Write a program to print the following star pattern:



1. Write a program to implement Bubble Sort in Java.
2. Write a Java program to demonstrate the concept of method overloading.
3. Write a program to print the following star pattern:



1. Write a program to print the following pyramid pattern:



1. Write a Java program to check if two strings are anagrams.
2. Write a Java program to implement linear search on an array.
3. Write a Java program to demonstrate the use of inheritance by creating a base class Animal and subclass Dog.
4. Write a program to print the following diamond pattern:



1. Write a Java program to implement multithreading by extending the Thread class and implementing the Runnable interface.
2. Write a Java program to implement a Singleton design pattern.

“हर क ठनाई के पीछे एक बड़ा अवसर छु पा होता है।"

(Every challenge hides a great opportunity.)

***Best Of Luck***