**Java Intern Assessment – Set 2 (100 Marks)**

**Section A: Multiple Choice Questions (20 × 1 = 20 Marks)**

1. Which of the following is not a primitive type in Java?  
   A) int  
   B) float  
   C) String  
   D) char
2. Which loop executes at least once irrespective of the condition?  
   A) for  
   B) while  
   C) do-while  
   D) foreach
3. Which operator is used for bitwise AND in Java?  
   A) &&  
   B) &  
   C) |  
   D) ^
4. Which method is called automatically when an object is created?  
   A) finalize()  
   B) constructor  
   C) static block  
   D) main()
5. Which collection does not allow duplicate elements?  
   A) ArrayList  
   B) HashSet  
   C) LinkedList  
   D) Vector
6. Which keyword is used to inherit a class in Java?  
   A) implements  
   B) extends  
   C) inherits  
   D) super
7. Which exception is a checked exception?  
   A) NullPointerException  
   B) IOException  
   C) ArithmeticException  
   D) ArrayIndexOutOfBoundsException
8. Which keyword is used to prevent method overriding?  
   A) abstract  
   B) final  
   C) static  
   D) const
9. What is the default value of a boolean in Java?  
   A) 0  
   B) 1  
   C) false  
   D) null
10. In Big-O notation, what is the complexity of binary search?  
    A) O(1)  
    B) O(n)  
    C) O(log n)  
    D) O(n²)
11. Which method compares the content of two strings?  
    A) ==  
    B) compareTo()  
    C) equals()  
    D) match()
12. What will happen if a subclass has a method with the same signature as its superclass?  
    A) Overriding  
    B) Overloading  
    C) Hiding  
    D) Compilation error
13. Which package contains the collection framework?  
    A) java.util  
    B) java.lang  
    C) java.io  
    D) java.sql
14. Which of these supports dynamic method dispatch?  
    A) Overloading  
    B) Static binding  
    C) Polymorphism (Overriding)  
    D) Constructors
15. Which keyword is used to throw an exception?  
    A) throws  
    B) throw  
    C) finally  
    D) error
16. Which class in Java is the root of all classes?  
    A) Main  
    B) Object  
    C) Base  
    D) Super
17. Which is not a valid access modifier in Java?  
    A) private  
    B) protected  
    C) package  
    D) public
18. Which data structure is best for implementing recursion?  
    A) Stack  
    B) Queue  
    C) Array  
    D) LinkedList
19. Which keyword is used to refer to the current object?  
    A) self  
    B) this  
    C) super  
    D) current
20. Which sorting algorithm has the best average-case performance?  
    A) Bubble Sort  
    B) Insertion Sort  
    C) Merge Sort  
    D) Selection Sort

**Section B: Scenario-Based Questions 50 marks**

1. In a **library management system**, you need to store a list of books where duplicates should not be allowed. Which Java collection will you choose and why?

Here we can use the hashmap for storing the list of books in the database because in hashmap we can store the unique key in

1. A **university portal** has a student class. Each student must always have a valid roll number, but marks can change later. Which OOP principle ensures that roll number is set only once, while marks can be modified?

Encapulation concept

By using of final variable for roll no and pass the value by constructor and by the setter we can update the marks

1. In an **online quiz app**, you need to display the next question only after the current one is answered, maintaining order. Which data structure will you use?

Single linked list

1. A **hospital system** must handle invalid age input (like -10). Which Java feature will you use to handle such situations?

Exception Handling

1. In a **banking system**, each account belongs to exactly one customer, but a customer can have multiple accounts. Which OOP concept models this relationship?

One – Many

1. An **e-commerce website** needs to sort a product catalog by price. Which sorting technique would you use and why?

Colloctions.sort() method for sorting

1. A **social media app** needs to store comments in the order they were posted but allow duplicates. Which collection is suitable?

Linkedlist, Queue

1. In a **train reservation system**, ticket numbers must be unique and should be searchable quickly. Which collection will you choose?

Set

1. A **school timetable app** must map each teacher to multiple classes. Which collection will you use?

HashMap

1. In an **online exam system**, a student can attempt multiple exams, but each exam must belong to exactly one student session. Which OOP relationship does this represent?

Many to one relation

1. A **weather forecasting app** frequently pushes and removes temperature data from the beginning of the list. Which data structure is efficient?

Stack.push() & Stack.pop()

1. In a **movie streaming app**, you must recommend movies sorted by rating (highest first). Which collection is best?

Use ArrayList and Use the Sort function

1. In a **mail application**, inbox mails should always show the latest on top. Which data structure would you choose?

Stack

1. A **flight booking system** must ensure that only valid seat numbers (between 1–200) are allowed. Which Java concept is used to enforce this validation?

Conditional Statments

1. In a **mathematical calculator app**, a factorial function calls itself repeatedly. Which programming concept is being applied?

Recursion

**Section C: Code Snippets (4 × 5 = 20 Marks)**

**Q1. Output Prediction – Inheritance**

class Parent {

void show() {

System.out.println("Parent show");

}

}

class Child extends Parent {

void show() {

System.out.println("Child show");

}

}

public class Test {

public static void main(String[] args) {

Parent p = new Child();

p.show();

}

}

Output:

Child show

**Q2. Exception Handling**

public class Test {

public static void main(String[] args) {

try {

int a = 5/0;

} catch (Exception e) {

System.out.println("Exception caught");

} finally {

System.out.println("Finally block executed");

}

}

}

Output:

Exception caught

Finally block executed

**Q3. String Handling**

public class Test {

public static void main(String[] args) {

String s1 = new String("Java");

String s2 = "Java";

String s3 = "Java";

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

System.out.println(s2 == s3);

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

}

}

Output:

false

true

true

**Q4. Polymorphism**

class A {

void print() { System.out.println("A"); }

}

class B extends A {

void print() { System.out.println("B"); }

}

public class Main {

public static void main(String[] args) {

A obj = new B();

obj.print();

}

}

Output:

B

**Section D: Coding Questions (2 × 5 = 10 Marks)**

1. Write a Java program to check whether a string is a **palindrome**.
2. public class palindrome {
3. public static boolean isPalindrome(String args) {
4. String rev = "";
5. for (int i = args.length() - 1; i < 0; i--) {
6. rev += args.charAt(i);
7. }
8. return ((args == rev) ? true : false);
9. }
10. public static void main(String[] args) {
11. String str = "Hello Aditya Ji";
12. System.out.println(isPalindrome(str) + " Palindrome");
13. }
14. }

2. Write a Java program to **find the second largest element in an array**.

public class Test {

    public static int findSecond(int array[]) {

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

            for (int j = 0; j < array.length; j++) {

                if (array[i] > array[j]) {

                    int t = array[j];

                    array[j] = array[i];

                    array[i] = t;

                }

            }

        }

        return array[1];

    }

    public static void main(String[] args) {

        int array[] = { 456, 835, 235, 76978, 2345132, 56768, 9 };

        System.out.println(findSecond(array));

    }

}