JavaScript– 100 Marks Question Paper

Part A – One Mark Questions (10 × 1 = 10 Marks)

1. What is a variable in JavaScript?

2. List any two primitive data types.

3. Write the syntax to declare a constant variable.

4. What is the output of typeof null?

5. Write one example of an arithmetic operator.

6. What will 5 == "5" return?

7. Which keyword is used for conditional branching?

8. Write a loop that runs exactly 5 times.

9. How do you find the length of an array named nums?

10. How do you access the value of key "name" in an object person?

Part B – Five Marks Questions (10 × 5 = 50 Marks)

11. Write a JavaScript program for a Simple ATM System using if–else with the following data:

```
let people = [
  { name: "Arun", age: 19 },
  { name: "Meena", age: 15 },
  { name: "Kumar", age: 30 },
  { name: "Banu", age: 12 }
];
```

Each person should be checked if they can vote, are too young, or get a candy.

12. Write an example of an **Arrow Function (ES6)** and explain its purpose.

13. Write an example of an **Anonymous Function** and explain when it is used.

14. Write a program showing **adding and removing elements in an array** using methods like push, pop, and unshift.

15. Explain **transforming and filtering data** in JavaScript with one method (e.g., filter() or map()) and example.

16. Write an example for **searching and checking conditions** in arrays (e.g., using includes() or some()) and explain.

17. Write a program to **sort an array of objects** by name and by age:

```
let students = [
  { name: "Ram", age: 22 },
  { name: "Sita", age: 20 },
  { name: "Laxman", age: 25 }
];
```

18. What is an **Object** in JavaScript? Give an example and explain how to **access object properties**.

19. Why do we use the **this keyword** inside an object? Explain with an example.

20. Differentiate between **merging Arrays and merging Objects**. Write any 5 key differences.

21. What is **Object Destructuring**? Explain with an example.

Part C – Ten Marks Questions (4 × 10 = 40 Marks)

22. Write a JavaScript program for a **traffic signal system**:

If signal is:

- "red" → Print "Stop"
- "yellow" → Print "Ready"
- "green" → Print "Go"

    Use if–else or switch to check and print appropriate message.

23. Write a JavaScript program using a loop to simulate a **shopping cart total**:

- Array of product prices
- Calculate total amount using a loop
- Display output like:

  Total 3 items

  Total amount: ₹1500

24. Create a **simple ATM system** using functions and a switch statement with the following features:

- checkBalance()
- deposit(amount)
- withdraw(amount)
- exit()

25. Student Report Card Generator

Create an **array of students** with each student having:

```
name: "Ravi",
marks: [80, 75, 90]
```

Write JavaScript functions to:

1. Calculate total and average marks for each student
2. Find the topper student
3. Rank all students
4. Group students by grade (A, B, C, etc.)

26. Create a JavaScript **object named fitnessTracker** for the user Sowmiya.

It should have properties:

- name
- totalSteps
- dailyGoal

Include a method walk(steps) that updates total steps, checks goal progress, and prints results like:

```
Sowmiya walked 3000 steps. Total steps: 8000
Keep going! 2000 steps remaining.
Sowmiya walked 2500 steps. Total steps: 10500
Goal reached! Sowmiya walked 10500 steps today!
```