1. What is the result of the following code?

* console.log(true && false);
  1. true
  2. false
  3. undefined
  4. null

1. What does the following code output?

* console.log(false || true);
  1. true
  2. false
  3. undefined
  4. null

1. What is the value of result?

* const result = !true;  
  console.log(result);
  1. true
  2. false
  3. undefined
  4. null

1. What will be logged to the console?

* console.log(10 > 5 && 3 < 4);
  1. true
  2. false
  3. undefined
  4. null

1. What will the following code output?

* console.log(5 === 5 || 5 > 10);
  1. true
  2. false
  3. undefined
  4. null

1. What is the result of this code?

* const x = false;  
  const y = true;  
  console.log(x && y || !x);
  1. true
  2. false
  3. undefined
  4. null

Here we are using Three logical operators at once, In JavaScript And(&&)operator has more specificity followed by OR(||) operator and not(!) operator respectively

So, the expression can be written like

Console.log((x&&y)||!x);

Console.log(false||true);

Output: true

1. What does this code evaluate to?

* console.log(!!(5 > 3));
  1. true
  2. false
  3. undefined
  4. null

1. What will result be?

* const result = false || 0 || "hello";  
  console.log(result);
  1. false
  2. 0
  3. "hello"
  4. Undefined

The Given equn can be written as (false||0)||”hello”

0 and false are falsy values in JavaScript, so when we perform the OR operation on TWO falsy values JS returns the second Operand

Console.log(false || 0) 🡺 returns 0

Console.log(0 || “hello”) 🡺returns true as final output because every value is considered as true other than these following values

(false,0,NaN,undefined,empty-String,null)

So here “hello” is considered as true. performing OR Operation between False and True returns True value which is “hello”

1. What will the following code return?

* console.log(null && "JavaScript");
  1. null
  2. "JavaScript"
  3. true
  4. false

1. What does this code output?  
   console.log(true || false && false);
   1. true
   2. false
   3. undefined
   4. null
2. What is the result of the following expression?  
   console.log(!("hello" && 0));
   1. true
   2. false
   3. null
   4. undefined
3. What will be logged?  
   console.log(10 || 0 && 5);
   1. 10
   2. 0
   3. 5
   4. false
4. What will result be?  
   const result = "abc" && "def" || "";

console.log(result);

* 1. "abc"
  2. "def"
  3. ""
  4. Undefined

When you’re Performing And Operation on Two Truthy values the AND Operator returns the Second Truthy values as output, In this case we are performing and operation between two strings which are considered as true and it returns the second operand from those two strings and perfroms OR operation between a True value and False value(Empty string) which returns true part(“def”) as output.

1. What does this code evaluate to?  
   console.log(3 > 2 && 2 > 4);
   1. true
   2. false
   3. undefined
   4. null
2. What will the following code return?  
   console.log(false || NaN || undefined);
   1. false
   2. NaN
   3. undefined
   4. null

**#scenario-based questions**

### 1. Eligibility Check

Write a condition to check if a student is eligible for a scholarship. The criteria are:  
- The student’s grade is A or B.  
- The student’s attendance is above 75%.  
Use a ternary operator to assign "Eligible" or "Not Eligible" to a variable.

**CODE**

var grade = "A";

var attendence = 75;

var res1 = ((grade=="A"||"B")&&(attendence>=75))?'Eligible for Scholarship':'Not eligible for scholarship';

console.log(res1);

### 2. Age Group Classification

Classify a person based on their age:  
- If the age is less than 13, they are a “Child”.  
- If the age is between 13 and 19 (inclusive), they are a “Teenager”.  
- Otherwise, they are an “Adult”.  
Use nested ternary operators to determine the classification.

**CODE**

var age = 22;

var res1 = (age<13)?'Child':(age>13&&age<16)?'Teenager':'Adult';

console.log(res1);

### 3. Login Status

Check the login status of a user. A user is considered logged in if:  
- isLoggedIn is true.  
- Their session is active (sessionActive is true).  
Use a ternary operator to log "Welcome Back" if the user is logged in and "Please Log In" otherwise.

**CODE**

var isLoggedIn = true;

var sessionActive = false;

var result = (isLoggedIn && sessionActive)?'Welcome Back':'Please Log In';

console.log(result);

### 4. Grade Evaluation

Assign a letter grade based on a student’s score:  
- Scores 90 and above: "A".  
- Scores between 80 and 89: "B".  
- Scores between 70 and 79: "C".  
- Scores below 70: "Fail".  
Use nested ternary operators to determine the grade.

**CODE**

var score = 60;

var grade = (score>=90)?'Grade-A':(score>80 && score<89)?'Grade-B':(score>70&&score<79)?'Grade-C':'Fail';

console.log(grade);

### 5. Product Discount Validation

Determine the discount for a product based on the following criteria:  
- If the product price is greater than $100, the discount is 20%.  
- Otherwise, the discount is 10%.  
Use a ternary operator to set the discount percentage.

**CODE**

var price = 120;

var discountedPrice = (price>100)?`Discount is 20% and you're total price is ${price-price\*(20/100)}`:`Discount is 10% and you're total price is ${price-price\*(10/100)}`;

console.log(discountedPrice);