**Module 28**

**Que.1:Explain the role of operators in JavaScript. Why they are essential in programming?**

**Ans:***Operators are the special symbol use to perform operation on values and variables.*

*They essential for programming because they enables the mathematical computation.*

*Examples Arithmatic (+,-,\*,/),Assignment operator (=), Comparison operator (=, !=).*

**Que.2: Describe the categorization of operators in JavaScript based on their functionality. Provide some examples for each category.**

**Ans:***JavaScript operators are categorized based on their functionality.*

**i) Arithmetic Operator:** *Used to perform mathematical operations.*

*Eg. addition(+), subtraction(-),multiplication(\*),division(/),modulo(%).*

**ii) Assignment Operator:** *It is used to assign value to variable.*

*Eg. assign(=), add and assign(+=), subtract and assign(-=), multiply and assign(\*=).*

**iii) Comparison Operator:***it is use to compare the two values and return boolean value (true or false).*

*Eg. equal to (==), not equal (!=), greater than(>), less than (<).*

**iv) Logical operator:***It combine the multiple boolean expression.*

*Eg. && (logical and), || (logical or), ! (logical not).*

**v) Conditional operator:***It assign the values based on the condition and it is also called as ternary operator.*

*Eg. condition?valueA:valueB.*

**vi) Unary Operator :***It is single operand.*

*Eg. ++ (increament ) - - decrement .*

**Que.3: Differentiate between unary, binary and ternary operators in JavaScript. Give some examples of each.**

**Ans:Unary operator** *operate on single operand*

*eg.* let a=5;

a++;

**Binary operator** *operates on two operands.*

eg. let a=10 , b=15;

let sum=a+b;

**Ternary operator** *operates on three operands.*

eg. let personAge=19;

let vote=(personAge>=18)?”yes”:”no”;

**Que.4:Discuss the precedence and associativity of operators in JavaScript. Why is understanding these concept important?**

**Ans:**  **Precedence** *defines the orders on which operator are evaluated.*

*\* multiplication have higher precedence than +sum*

**Associativity** *defines the order on which the operators with same precedence is evaluated.It can be left to right or right to left associative.*

*Eg. x=y=15;*

*y=15 then x=15.*

**Que.5:Write a JavaScript program that calculate the simple interest using the formul Simple Interest =(principal\*rate\*time)/100.**

**Ans:** let principal=15000;

let rate=14;

let time=5;

let ans= (principal\*rate\*time)/100;

console.log("Simple interest = ",ans);

**Que.6:Write a JavaScriptProgram to calculate the body mass index (BMI) using the formula BMI=weight(kg)/height\*height(meter).**

**Ans:l**et weight=76;

let height=1.7;

let ans =(weight)/(height\*\*height);

ans=ans.toFixed(2);

console.log("Your BMI is :",ans);

**Que.7:Write a JavaScript program to calculate the area of a circle given its radius value of 10. Use approximate arithmetic operator.**

**Ans:let radius=8;**

**let pi=3.141592;**

**let area=pi\*radius\*radius;**

**area=area.toFixed(3);**

**console.log("Area of circle is : ",area);**