01

Exercise

- **Operator**
- **Statement**

1. What is the value of y after evaluating the expression given below?
   - y+=++y + y-- + --y; when let y=8
2. Give the output of the following expression:
   - a+=a++ + ++a + --a + a--; when a=7
3. If let y=10 then find:
   - z=(++y * (y++ +5));
4. What are the values of x and y when the following statements are executed?

   let a = 63, b = 36;

   let x = (a < b) ? true : false;

   let y= (a > b) ? a : b;

5. Name the operators listed below:
   - i. < ii. ++ iii. && iv. ?:
6. Write a program to average of 36, 45 and 53 using variables

```
function  main()
{
let a=36,b=45,c=53;
let av;
av=(a+b+c)/3;
console.log("Average="+av);
}
```

7. Write a program to input the Principal, Rate and Time and calculate the Simple Interest.

$$\text{Simple Interest}=\frac{(\text{Principal}*\text{Rate}*\text{Time})}{100}$$

```
function main()
 {

 let p,r,t,si;
 console.log("Enter the principal, rate and time:");
 p=prompt('Enter the principal');
 r=prompt('Enter the Rate');
 t=prompt('Enter the Duration');
 si=(p*r*t)/100;
 console.log("Simple Interest="+si);
 }
```

8. State the difference between = =and = ==.
9. Convert the following if else if construct into switch case

```
if(var==1)
console.log("good");
else if(var==2)
console.log("better");
else if(var==3)
console.log("best");
else
console.log("invalid");
```

```
switch(var)
{
case 1:
console.log("good");
break;
case 2:
console.log("better");
break;
case 3:
console.log("best");
break;
default:
console.log("invalid");
}
```

10. Write a program to accept a mark obtained by a student in computer science and print the grades accordingly:

Marks	Grade
Above 90	A
70 to 89	B
50 to 69	C
below 50	D

```
function main()
 {
 let c;
 console.log("Enter marks in Computer science:")
 c=sc.nextlet();
 if(c>=90)
 console.log("Grade=A");
 else if(c>=70 && c<90)
 console.log("Grade=B");
 else if(c>=50 && c<70)
 console.log("Grade=C");
 else
 console.log("Grade=D");
 }
```

11. A cloth showroom has announced the following festival discounts on the purchase of items, based on the total cost of the items purchased:

Total Cost	Discount (in Percentage)
Less than ₹2000	5%
₹2001 to ₹5000	25%
₹5001 to ₹10000	35%
Above ₹10000	50%

Write a program to input the total cost and compute and display the amount to be paid by the customer after availing the discount.

```
function main()
 {
 let tc,d,ap;
 console.log("Enter the total cost of the items:");
 tc=prompt('Enter Cost');
 if(tc<=2000)
 d=5/100f*tc;
 else if(tc>=2001 && tc<=5000)
 d=25/100f*tc;
 else if(tc>=5001 && tc<=10000)
 d=35/100f*tc;
 else
 d=50/100f*tc;
 ap=tc-d;
 console.log("Amount Payable:"+ap);
 }
}
```

12. An electronics shop has announced the following seasonal discounts on the purchase of certain items.

Purchase Amount is₹	Discount on Laptop	Discount on desktop PC
0–2500	0.0%	5.0%
25001 – 57000	5.0%	7.5%
57001 – 100000	7.5%	10.0%
More than 100000	10.0%	15.0%

Write a program based on the above criteria, to input name, address, amount of purchase and the type of purchase (L for Laptop and D for Desktop) by a customer. Compute and print the net amount to be paid by a customer along with his name and address.

(Hint: discount = (discount rate/100)* amount of purchase

Net amount = amount of purchase – discount)

13. Given below is a hypothetical table showing rates of Income Tax for male citizens below the age of 65 years:

Taxable Income (TI) in	Income Tax in
Does not exceed 1,60,000	Nil
Is greater than 1,60,000 and less than or equal to 5,00,000	(TI – 1,60,000) * 10%
Is greater than 5,00,000 and less than or equal to 8,00,000	[(TI – 5,00,000) * 20%] + 34,000
Is greater than 8,00,000	[(TI – 8,00,000) * 30%] + 94,000

Write a program to input the age, gender (male or female) and Taxable Income of a person. If the age is more than 65 years or the gender is female, display "wrong category*.

If the age is less than or equal to 65 years and the gender is male, compute and display the Income Tax payable as per the table given above.

14. Write a program to input an integer and find its factorial. Factorial of a number is the product of all natural numbers till that number. For example, factorial of 5 is 120 since 1×2×3×4×5=120.
15. Write a program to input an integer and check whether it is a prime number or not

```
function main()
 {
 let i,n,c=0;

 console.log("Enter an integer:");
 n=sc.nextInt();
 for(i=1;i<=n;i++)
 {
 If(n%i==0)
c++;
 }
 If(c==2)
 console.log("Prime Number");
 else
console.log("Not a Prime Number");
 }
```

16. Write a program to find the sum of all 3-digit even natural numbers.

```
function main(){
let i,s=0;
for(i=100;i<=998;i+=2)
{
s+=i;
}
console.log("Sum="+s);
}
```

17. Write a program to find the sum of all 3 digit odd natural numbers, which are multiples of 5.
18. Write a program to input an integer and find its factorial. Factorial of a number is the product of all natural numbers till that number. For example factorial of 5 is 120 since 1×2×3×4×5=120.

```
function main()
 {
 let i,n,f=1;
 n=prompt('Enter an integer:');
 for(i=1;i<=n;i++)
 {
 f=f*i;
 }
 console.log("Factotrial:"+f);
 }
```

19. Write a program to find the sum of 1st 10 numbers of Lucas series i.e. 2,1,3,4,7,11,18,…. Lucas series is such a series which starting from 2 and 1, and subsequent numbers are the sum of the previous two numbers.
20. Write a program to print the first 15 numbers of the Pell series. Pell series is such a series which starts from 1 and 2 , and subsequent numbers is the sum of twice the previous number and the number previous to the previous number. Pell series: 1, 2, 5, 12, 29, 70, 169, 408, 985, 2378, 5741, 1386.

ALL THE BEST