

Question Bank

1. Write a program using over loading function with name as area to calculate
 - a. Area of a square (side * side)
 - b. Area of a rectangle (length * breadth)
 - c. Area of a circle. (Π * radius * radius)

2. Write a menu driven program to do the following tasks:
 - a. To check whether the no is even or odd.
 - b. To find the sum of even natural numbers.
 - c. To display error message if wrong option is selected

3. Write a program to implement a class STUDENT having following members
: Data Member
 - a. Computer code of a student
 - b. Height of the student
 - c. Weight of the studentMember methods
 - a. To assign initial values
 - b. To display the dataWrite a function main to call both the functions

4. Write a menu driven program to accept two numbers and find
 - a. HCF / GCD
 - b. LCM

5. Write a program which generates all the magic numbers between 100 and 500.

For example, 127 is a magic number as $127 = 1 + 2 + 7 = 10$, $10 = 1 + 0 = 1$

235 is a magic number as $235 = 2 + 3 + 5 = 10$, $10 = 1 + 0 = 1$.

6. Write a program which generates all the Perfect numbers between 1 and 500.
A number is said to be perfect if sum of the factors(including 1 and excluding the number itself) is same as the original number
Eg: 6 is a perfect number
Factors of 6 are :1,2,3 $1 + 2 + 3 = 6$

7. MSEB charges for electricity from their consumers according to the units consumed (per month) as per the given tariff:

Units Consumed	Charges
Upto 100 units	Rs 1.65 /unit
> 100 units and upto 200 units	Rs 1.85 /unit
>200 units and upto 300 units	Rs 2.35 / unit
>300 units	Rs 2.95 / unit

WAP to calculate and print the electricity bill.

8. Write a program to find the sum of the following series:
 $1! + 2! + 3! + \dots + n!$
Eg. $4! = 4 * 3 * 2 * 1$

9. Write a program to print the following series:
a. $2+5+10+17+26+\dots+n$ times
b. $0+3+8+15+24+\dots+n$ times

10. Write a program to print the following pattern:
0
10
010
1010
01010

11. Write a program to print the following pattern:
55555
44444
33333
22222
11111

12. Write a program to print the following pattern:
1
2 3
4 5 6
7 8 9 10
11 12 13 14 15

13. Write a program to calculate whether the nos given are Pythagorean triplet or not.
 $(hyp)^2 = side1^2 + side2^2$.
Accept the nos from the user.

14. A cloth showroom has announced the following festival discounts on purchase of items:

Amount of Purchase	Discount in %
Less than Rs. 1000	5%
Rs 1000 to Rs 5000	8 %
Rs 5001 to Rs 10000	12%
Above Rs 10000	19%

WAP to compute the net amount paid by the customer. Assume all the required values are inputted by the user.

15. Write a program to define a function named compute (int n) to display the sum of following series .

$(1) + (1+2) + (1+2+3) + (1+2+3+4) + \dots + (1+2+3+\dots+n)$. Up to N terms.

Predict the Errors in this program and explain them:

1. class Data
{

public int result(int x ,inty)
{
 int z= x*y;
 return z;
}
public double compute(int a, int b)
{
 double c;
 c=a*b*z/a;
 Return c;
}
public void display()
{
 System.out.println(z);
 d= compute(5,10);
 System.out.println(c);
}
2. class Sample
{
 private int num;
 public void square(int n)
 {
 int var;
 var= n*n;
 result=var;
 }
 public int twice()
 {
 int twice=var*2;
 if (twice>100)
 {
 int store;
 store=twice;
 twice=100;
 }
 System.out.println("The value passed as parameter was"+n);
 System.out.println("The original value of twice is"+store);
 System.out.println("The new value of twice is " +twice);
 }

State the output of the following fragment code/programs:

```
1. int i;
for( i=0;i<=10;i++)
System.out.println(++i);
```

```
2. int i;
for( i=12;i>5;i-=2)
{
System.out.println();
System.out.print(i);
}
```

```
3. int i, sum;
for(i=5,sum=1;sum<10;i++)
{
sum+=i;
}
System.out.println("Sum is"+sum);
```

```
4. int a=0,i=4;
while(i<10)
{
a= ++i*2;
}
System.out.println(a);
```

```
5. if (year% 100==0)
{
if(year%400==0)
System.out.print("Leap Year");
else
System.out.print("Not Leap Year");
}
else
System.out.print("Not a Century year");
(i) year=2051 (ii) year=2000 (iii) year=2171 (iv) year=1900
```

```
6. if(x++==10)
System.out.print("Result is 11");
else
if(++x==10)
System.out.println("Result is 10");
else if(--x==10)
System.out.print("Result is 10");
else
System.out.println("Result is neither 10 or 11");
(i) x=9 (ii) x=10 (iii) x= 11 (iv) x=12
```

```

7. switch(num)
   {
     case 10:
     case 100:
       System.out.println("Original " + num);
       ++num;
     case 1000:
     case 500:
       ++num;

     default : --num;
       System.out.print ("Final"+num);

   }

```

(i) num=10 (ii) num =100 (iii) num = 0 (iv) num=500

8. a=5, b=3, c=5 , x=8.8, y=3.5, z=-5.2

- a. a%c
- b. a*b/c
- c. (a*c)%b
- d. x/y
- e. x/x+y
- f. int(x) % (int)y

Q Consider the following class declaration and answer the question that follow:

```

class Abc
{
  int c, a=5, b=10;           //statement 1
  void sum()
  {
    int a=100;               //statement 2
    c=a+b;
  }
}

```

- a. What kind of variables are a, c and b declared in statement1?
- b. What kind of variables is a declared and initialized in statement2?
- c. What result gets stored in a, b and c within the method sum()?