**1. Write a program in Java to check if a number is even or odd in Java?** (input 2 output true, input 3 : output false)

Mod 2

/2 if .5 then odd

**2. Write a program in Java to find out if a number is prime in Java?** (input 7: output true , input 9 : output false)

If /2 not prime

If / 1 prime

If / self prime

**3. Write Java program to check if a number is palindrome in Java?**( 121 is palindrome, 321 is not)

String left, string right

**4. How to find if a number is power of 2 in Java?** (1,2, 4 power of 2, 3 is not)

If /2 power

**5. Write program to sort an integer array without using API methods?**

< smaller Bubble sort

**6. Write Java program to check if a number is Armstrong number or not?** (input 153 output true,  123 output false)

An Armstrong number of 3 digit is a number for which sum of cube of its digits are equal to number e.g. 371 is an Armstrong number because 3\*3\*3 + 7\*7\*7 + 1\*1\*1 = 371).

**7. Write a program in Java to reverse any String without using StringBuffer?**

stringbuffer

**8. Write a program in Java to print Fibonacci series up to given number? Write both iterative and recursive version.**

**9. Write a Java program to calculate factorial of an integer number ? Both iterative and recursive solution.**

Mod then increment

**10. Print following structure in Java?**

\*

\*\*\*

\*\*\*\*\*

\*\*\*

\*

Foreach{

For{

}

For{

}

}

**11. Program to check the input character for uppercase, lowercase, no. of digits.**

Left[0] or substring

**12. Write Java program to generate a random number between 1 to 6.**

Random rnd = new random(1,6);

Rnd.next();

**13. Write Java program to allow the user to input two integer values and then the program prints the results of adding, subtracting, multiplying, and dividing among the two values.**

**14. Write Java program to allow the user to input his/her age. Then the program will show if the person is eligible to vote. A person who is eligible to vote must be older than or equal to 18 years old.**

If < 18

**Enter your age: 18**

**You are eligible to vote.**

**15. Write a Java program that determines a student’s grade.**

**The program will read three types of scores (assignments, mid-term, and final scores) and determine the grade based on the following rules:**

**-if the average score >=90% =>grade=A**

**-if the average score >= 70% and <90% => grade=B**

**-if the average score>=50% and <70% =>grade=C**

**-if the average score<50% =>grade=F**

**See the example output below:**

**Assignments score: 80**

**Mid-term score: 68**

**Final score: 90**

**Your grade is B.**

**16. Write a Java program to calculate the revenue from a sale based on the unit price and quantity of a product input by the user.**

**The discount rate is 10% for the quantity purchased between 100 and 120 units, and 15% for the quantity purchased greater than 120 units. If the quantity purchased is less than 100 units, the discount rate is 0%.**

**See the example output as shown below:**

**Enter unit price: 25**

**Enter quantity: 110**

**The revenue from sale: 2475.0$**

**After discount: 275.0$(10.0%)**

**17. Write a Java program by using two for loops to produce the output shown below:**

**\*\*\*\*\*\*\*  
  
\*\*\*\*\*\*  
  
\*\*\*\*\*  
  
\*\*\*\*  
  
\*\*\*  
  
\*\*  
  
\***

Foreach

{

For{

}

For{

}

}

**18. Write a Java program by using three for loops to print the following pattern:**

**1\*\*\*\*\*\***

**12\*\*\*\*\***

**123\*\*\*\***

**1234\*\*\***

**12345\*\***

**123456\***

**1234567**

Foreach

{

For{

}

For{

}

}

**19. By using the sequential search algorithm, write a Java program to search for an element of an integer array of 10 elements.**