SAVEETHA SCHOOL OF ENGINEERING
SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCES
DEPARTMENT OF KNOWLEDGE ENGINEERING
MODEL EXAMINATION
CSA09 –Programming in JAVA

1. Write a program to check the entered user name is valid or not. Get both the inputs from the user.

2. Write a Java program to reverse a word using a loop. (Not to use inbuilt functions) (10)
   Sample Input:
   String: TEMPLE
   Sample Output:
   Reverse String: ELPMET

3. Write a Java program to print the number of vowels in the given statement. (10)
   Sample Input:
   Saveetha School of Engineering
   Sample Output:
   Number o vowels = 12

4. Write a program to print consonants and vowels separately in the given word (10)
   Sample Input:
   Given Word: Engineering
   Sample Output:
   Consonants: n g n r n g
   Vowels: e i e ei

5. Write a program to find the number of special characters in the given statement (10)
   Sample Input:
   Given statement: Modi Birthday @ September 17, #&$% is the wishes code for him.
   Sample Output:
   Number of special Characters: 5

6. Write a Java Program to find whether the given number is an Armstrong number or not (10)
   Sample Input:
   Enter number: 153
   Output: Armstrong No

7. Write a program to reverse a number using loop?(Get the input from user) (10)
   Sample Input:
   Number: 14567
   Sample Output:
   Reverse Number: 76541

8. Write a program to print the given number is Perfect number or not? (10)
   Sample Input:
   Given Number: 6

Sample Output:
It's a Perfect Number

9. Write a program to find whether the person is eligible for vote or not. And if that particular person is not eligible, then print how many years are left to be eligible. (10)

Sample Input:
Enter your age: 7
Sample output:
You are allowed to vote after 11 years

10. Write a program to print the Fibonacci series. (10)

Sample Input:
Enter the n value: 6
Sample Output:
0 1 1 2 3 5

11. Write a program to find the square, cube of the given decimal number (10)

Sample Input:
Given Number: 0.6
Sample Output:
Square Number: 0.36
Cube Number:0.216

12. Write a program to find the factorial of n? (10)

Sample Input:
N = 4
Sample Output:
4 Factorial = 24

13. Write a program to convert Decimal numbers equivalent to Binary numbers. (10)

Sample Input:
Decimal Number: 15
Sample Output:
Binary Number = 1111

14. Write a program to find the sum of digits of N digit number (sum should be a single digit) (10)

Sample Input:
Enter N value: 3
Enter 3 digit numbers: 143
Output: 8

15. Write a program to print the numbers from M to N by skipping K numbers in between.

Sample Input: (10)
M = 50
N = 100
K = 7
Sample Output:
50, 58, 66, 74, ...

16. Write a program to find the square, cube of the given decimal number (10)

Sample Input:

Given Number: 0.6

Sample Output:

Square Number: 0.36

Cube Number:0.216

17. Write a program to Display Multiplication table for 7^{th} table (10)

Sample Input 7

7 X 1 = 7

7 X 2 =14

….

18. Write a program using function to calculate the simple interest. Suppose the customer is a senior citizen. He is being offered 12 percent rate of interest; for all other customers, the ROI is 10 percent. (10)

Sample Input:

Enter the principal amount: 200000

Enter the no of years: 3

Is customer senior citizen (y/n): n

Sample Output:

Interest: 60000

19. Write a Java program for matrix addition. (10)

Sample Input:

Mat1 = 1 2
5 3

Mat2 = 2 3
4 1

Sample Output:

Mat Sum = 3 5
9 4

20. Write a program for matrix multiplication. (10)

Sample Input:

Mat1 = 1 2
5 3

Mat2 = 2 3
4 1

Sample Output:

Mat Sum = 10 5
22 18

21. Write a Program to Remove the Duplicate Items from a array. (10)

Sample Input:

Enter the number of elements in array:7

Enter elements:10,20,20,30,40,40,50

Sample Output:

Non-duplicate items:

[10, 20, 30, 40, 50]

22. Write a Java program to print the below pattern (10)

```
1
2 2
3 3 3
4 4 4 4
```

23. Write a Java program to print the below pattern (10)

```
1
1 1
1 1 1
1 1 1 1
1 1 1 1 1
```

24. Write a Java program to print the below pattern (10)

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

25. Write a program to print the Right Triangle Star Pattern (10)

Sample Input: n = 5

Output:

```
    *
   * *
  * * *
 * * * *
* * * * *
```

26. Write a program to print the below pattern (10)

```
1
2 2
3  3  3
4  4   4   4
3  3  3
2    2
1
```

27. Write a program to print the following pattern (10)

Sample Input:

Enter the number to be printed: 1

Max Number of time printed: 3

```
1
11
111
11
1
```

28. Create a java program to construct the volume of Box using default constructor method.(10)

29. Develop a Java application to generate Electricity bills. Create a class with the following members: Consumer no., consumer name, previous month's reading, and current month's reading. Compute the bill amount using the following tariff. (10)

    First 100 units – Rs. 1 per unit
    101-200 units – Rs. 2.50 per unit
    201 -500 units – Rs. 4 per unit
    > 501 units – Rs. 6 per unit

30. Write a Java program to create a class Student and create a constructor that assigns the values for the student details such as student name, register number, and five subject marks. Calculate the total and average of five subject marks and display the marks and average (10)

31. Define an Employee class with suitable attributes having getSalary() method, which returns salary withdrawn by a particular employee. Write a class Manager which extends a class Employee, override the getsalary() method, which will return salary of manager by adding traveling _allowance, house rent allowance etc. (10)

32. Bank is a class that provides method to get the rate of interest. But, rate of interest may differ according to banks. For example, SBI, ICICI and AXIS banks are providing 8.4%, 7.3% and 9.7% rate of interest. Write a Java program for above scenario. (10)

33. Create a class name 'overload'. Write a program to assign the values for two values by a different number of arguments using a single function. [Addition of two and three variables] (10)