

# SUNRISE ACADEMY

## PROJECT QUESTIONS

Class – 10<sup>th</sup>

### Instructions:

1. Write the given programs in java in a project file.
2. Start each program from the fresh page and write down the question before writing the solution of the program.
3. Write variable description for each of the program.
4. The file need to be covered with light blue chart papers and cellophane sheets and the label should be printed and pasted.
5. No colouring and decoration allowed on the cover.
6. The project should have the following pages:
  - a. Table of contents (program title like – 1. Program 1- composite number check)
  - b. Certificate
  - c. Acknowledgement
  - d. Programs
7. Project will be evaluated and the student will be awarded marks out of 50 for the project work and 50 for the practical work.

### Programs

1. Write a program to check the number whether it is composite number or not.  
(**Composite Number.** more ... A whole **number** that can be divided exactly by **numbers** other than 1 or itself. Example: 9 can be divided exactly by 3 (as well as 1 and 9), so 9 is a **composite number**. But 7 cannot be divided exactly (except by 1 and 7), so is NOT a **composite number** (it is a prime **number**)).
2. Write a program to display the following pattern.  
\*  
\*\*  
\*\*\*  
\*\*\*\*  
\*\*\*\*\*
3. Print the sum of the following series  
 $1 + 12 + 123 + 1234 + \dots (123\dots n)$
4. Write a program to input an integer number from the user and print the sum of the digits. Example –  $123 = 1+2+3$  , sum=6

5. Write a menu driven program to accept a number and check and display whether it is prime number or not, or automorphic number or not. (Use switch – case statement)
  - a. Prime number – A number is said to be a prime number if it is divisible only by q and itself and not by any other number. Example - 3, 5, 7, 11, 13 etc.
  - b. Automorphic number – An automorphic number is the number which is contained in the last digit(s) of its square. Example – 25 is an automorphic number as its square is 625 and 25 is present as the last two digits.
6. Write a menu driven program to accept a number from the user and check whether it is Palindrome or a Perfect number.
  - a. Palindrome number – A number is a Palindrome which when read in reverse order is same as read in the right order. Example – 11, 101, 151 etc.
  - b. Perfect number – A number is called Perfect if it is equal to the sum of its factors other than the number itself. Example –  $6=1+2+3$
7. Using a switch statement, write a menu driven program to convert a given temperature from Fahrenheit to Celsius and vice versa. For an incorrect choice, an appropriate error message should be displayed.  
 (Hint :  $C = (5/9) * (F-32)$  and  $F= 1.8*(C+32)$ )
8. Write a menu driven program to calculate the area of square, rectangle, triangle and circle.
9. Write a program to generate a triangle or an inverted triangle till n terms based upon the user's choice of triangle to be displayed.

**Example 1**

Input: Type 1 for triangle and  
 Type 2 for inverted triangle

Output:

1  
 22  
 333  
 4444  
 55555

**Example 2**

Input: Type 1 for triangle and  
 Type 2 for inverted triangle

Output:

666666  
 55555  
 4444  
 333  
 22  
 1

10. A school has following rules for grading system:

- a. Below 25 - F
- b. 25 to 45 - E
- c. 45 to 50 - D
- d. 50 to 60 - C
- e. 60 to 80 - B
- f. Above 80 - A

Ask user to enter marks and print the corresponding grade.

**11.** Write a program to input basic salary of an employee and calculate its Gross salary according to following:

Basic Salary  $\leq$  10000 :            HRA = 20%, DA = 80%

Basic Salary  $\leq$  20000 :            HRA = 25%, DA = 90%

Basic Salary  $>$  20000 :            HRA = 30%, DA = 95%

**12.** Write a program to input electricity unit charges and calculate total electricity bill according to the given condition:

For first 50 units            Rs. 0.50/unit

For next 100 units            Rs. 0.75/unit

For next 100 units            Rs. 1.20/unit

For unit above 250            Rs. 1.50/unit

An additional surcharge of 20% is added to the bill

# SUNRISE ACADEMY

Session: 2021 - 2022

# COMPUTER APPLICATIONS

Made by:

Name: \_\_\_\_\_

Class: \_\_\_\_\_

# CERTIFICATE

This is to certify that \_\_\_\_\_ (Name of the student) of class \_\_\_\_\_ (Class) has successfully completed the project work on \_\_\_\_\_ Computer Applications for examination in the year of 2021-2022, under the guidance of \_\_\_\_\_ Miss. Shipra Khanna. It is further certified that this project is the individual work of the candidate.

\_\_\_\_\_  
Miss. Shipra Khanna  
(Subject Teacher)

\_\_\_\_\_  
External Examiner

\_\_\_\_\_  
Mrs. Nitu Tomar  
(Principal)

# ACKNOWLEDGEMENT

Primarily I would thank God for being able to complete this project with success. Then I would like to thank my subject teacher Miss. Shipra Khanna, whose valuable guidance has been the one that helped me patch this project and make it full prove success. His/Her suggestion and instruction has served as the major contribution towards the exhaustive of the contribution.

I would also like to extend my gratitude to the principal mam Mrs. Nitu Tomar for providing all the facility that was required. Then, I would like to thank my parents and friends who have helped me with their valuable suggestions. Their guidance has been helpful in various phases of the completion of the project. Last but not the least I would like to thank my classmates who have helped me.

Date: \_\_\_\_\_

Name: \_\_\_\_\_

Class: \_\_\_\_\_