# ANURAG ENGINEERING COLLEGE

(An Autonomous Institution)

I Year B.Tech. CSE - I Sem

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# (CS107ES) PROGRAMMING FOR PROBLEM SOLVING LAB - I

Prerequisites: Computer Fundamentals & Mathematics

# **Course objectives:**

- ☐ To be able to understand the fundamentals of programming in C Language.
- ☐ To be able to write, compile and debug programs in C.
- ☐ To be able to formulate problems and implement in C.

#### WEEK 1

 DOS commands: Changing the default Drive, VER,VOL,DATE,TIME,PROMPT,CLS,DIR,MD or MKDIR,CHDIR or CD,COPY CON,TYPE,MOVE,REN,COPY,EXIT.

### WEEK 2

2. LINUX Commands: PWD,CAL,DATE,ECHO,LS,CD,MKDIR, CAT,HEAD,TAIL, MV,CP,WC,VI Editor.

#### WEEK 3

- 3. Designing of flowcharts using raptor tool
  - a) Areas of Polygons
  - b) Calculation of Simple and Compound Interest
  - c) Swapping of Two numbers with and without temporary variable
- 4. a) Checking whether a number is even or odd
  - b) Sum of 'n' natural numbers
  - c) Checking a number whether it is divisible by any given number

#### WEEK 4

- 5. a) Write a program using control strings %d %c %s %f %e %o %x %i %g %u
  - b) Write a program to print 3 student details S.No, Student name, SSC percent, Interpercent, Address using backslash constants
  - c) Write a program to swap two variables without using third variable
- 6. a) Write a program to find displacement s=ut+1/2 at<sup>2</sup>.
  - b) Write a program to read P, T, R and find Simple Interest(SI) and Compound Interest(CI)
  - c) Write a program to find area and circumference of a Circle.

#### WEEK 5

- 7. a) Write a program using all relational and logical operators
  - b) Write a program using increment operator (pre and post) and decrement operator (pre and post)
- 8. a) Write a program using bitwise operators
  - b) Write a program to find largest among three numbers using conditional operator
  - c) Write a program to illustrate the use of size of () operator.

### WEEK 6

- 9. a) Write a program to accept a number and print if it is an odd or even number.
  - b) Write a program to find roots of quadratic equation ax<sup>2</sup>+bx+c=0
- 10. a) Write a program to accept two integers for a coordinate point and determine its quadrant.
  - b) Write a program to accept three integers and print the largest among them.

#### WEEK 7

- 11. a) Write a program to accept the year, find whether it is a leap year or not.
  - b) Write a program using arithmetic operators (+, -, \*, /) using else if.
- 12. a) Write a program that declares Class awarded for a given percentage of marks, where percentage of marks<40%=Failed,40% to <60%=second class,60% to <70%=First Class,>=70%=Distinction. Read percentage from standard input.
  - b) Write a program to find area of different geometrical figures such as a Circle, a Square, a triangle, and a Rectangle using Switch statement.

### **I INTERNALS**

## **WEEK 8**

- 13.a) Write a program to find the sum of 'n' natural numbers.
  - b) Write a program to find the sum of individual digits of a given number where number is a +ve integer.
- 14. a) Write a program to accept a number and reverse it.
  - b) Write a program to generate the first 'n' terms of Fibonacci series.

# WEEK 9

- 15. a) Write a program to generate all prime numbers between 1 and n, where 'n' is a value supplied by user.
  - b) Write a program to print sum of all odd numbers between 1 and 50 using do while statement.
- 16. a) Write a program to print the following patterns



b) Write a program to read two numbers x and n and compute the sum of this geometric progression: 1+x+x^2+x^3+...... +x^n.

#### WFFK 10

- 17. a) Write a program to find x power n using functions
  - b) Write a program to check whether a number is perfectnumber or not using functions
- 18. a) Write a program to find the factorial of a given number using functions
  - b) Write a program to find strong numbers between two given numbers using functions

## **WEEK 11**

- 19. a) Write a program to check whether the given number is armstrong or not using functions
  - b) Write a program to swap two values using functions
- 20. a) Write a program to calculate factorial of a given number using recursion
  - b) Write a program to find G.C.D using recursion

# **WEEK 12**

- 21. a) Write a program to find addition of two matrices using functions
  - b) Write a program to find the sum of elements of 3\*3 matrix using functions.

## **WEEK 13**

22. Write a program to accept rows and columns of two matrices and check whether multiplication is possible or not, if possible accept two matrices and find multiplication Of two matrices using functions.

# **WEEK 14**

- 23. Write a program to check whether the given string is palindrome or not 24. Write a program to find the length of a string and copy to another string variable.

# II INTERNALS

**CO-PO Mapping:** 

	PO 1	PO 2	PO 3	PO 4	PO 5	PO6	PO7	PO8	PO 9	PO 10	PO 11	PO 12
CO 1	1	1	✓	<b>√</b>								
CO 2	✓	1	✓	1								
CO 3	✓	1	1	✓								
CO 4	1	<b>\</b>	<b>√</b>	✓								
CO 5	✓	<b>\</b>	1	✓								
CO 6	1	1	1	1								