

Register No.: ..... Name: .....

## SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

### SECOND SEMESTER B.TECH DEGREE EXAMINATION (R), MAY 2023

(2020 SCHEME)

Course Code : 20EST102

Course Name: Programming in C

Max. Marks : 100

Duration: 3 Hours

#### PART A

*(Answer all questions. Each question carries 3 marks)*

1. Write a short note on structured programming.
2. Differentiate between compiler and interpreter?
3. What is an assignment statement? Give the general form of an assignment statement.
4. Distinguish between 'break' and 'continue' statements.
5. Illustrate different ways to initialize a 1D array.
6. Write a C program to find the sum and average of n integer numbers.
7. What is the difference between actual arguments and formal arguments.
8. How does an array differ from a structure? Explain with Example.
9. What is an array of pointer? How do you declare array of pointers?
10. Explain different modes of opening a file.

#### PART B

*(Answer one full question from each module, each question carries 14 marks)*

#### MODULE I

11. a) With a suitable diagram explain the basic Architecture of a Computer. (8)
- b) Write an algorithm to perform linear search on a given set of numbers. (6)

#### OR

12. a) Draw the flowchart for performing bubble sort operation. Illustrate the concept with a suitable example. (10)
- b) Write an algorithm to find the largest of 3 numbers. (4)

**MODULE II**

13. What are the different operators available in C. What do you mean by operator precedence? Explain the difference between Relational operator and conditional operator. (14 )

**OR**

14. a) Write a program to check whether the given number is Armstrong or not. (8 )  
b) Write a program to print the Fibonacci series up to a limit. (6 )

**MODULE III**

15. a) Write a C program to add two Matrices. (8)  
b) Write a C program to find the largest element in an array. (6)

**OR**

16. a) Define a string. Explain any four string manipulation library functions with their syntaxes. (8)  
b) Write a program to check whether a string is palindrome or not. (6)

**MODULE IV**

17. a) Explain the different elements of user defined functions in detail with suitable examples. (7)  
b) Write a C function isprime(num) that accepts an integer argument and returns 1 if the argument is a prime or 0 otherwise. Write a program that invokes this function to generate first 10 prime numbers. (7)

**OR**

18. a) Explain about the various storage classes in C. (8)  
b) Write a C program to find the factorial of a number using recursion. (6)

**MODULE V**

19. a) Write a C program to find the sum and mean of all elements in an array using pointer. (7)  
b) Explain pass by reference. Write a C program to swap two numbers using pass by reference method. (7)

**OR**

20. a) Explain the various file operations in C. (7 )  
b) Write a program to count number of vowels and consonants in a text file. (7 )

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