

Register No.: Name:

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

SECOND SEMESTER INTEGRATED MCA DEGREE EXAMINATION (S), AUGUST 2023 (2020 SCHEME)

Course Code: 20IMCAT108

Course Name: Problem Solving and Structured Programming

Max. Marks: 60

Duration: 3 Hours

PART A

(Answer all questions. Each question carries 3 marks)

1. Define token. What are the different types of tokens available in C language?
2. What are the fundamental data types used in C? Write the significance of each data type.
3. How does *break* and *continue* statements work in a C program? Give an example.
4. List the differences between *while loop* and *do-while* loop with suitable example.
5. Write a C program to find the largest element in an array.
6. Describe the declaration and initialization of one-dimensional and two-dimensional arrays.
7. What is recursion? Give an example.
8. Compare user defined functions and library functions.
9. What are the differences between arrays and structures? Give an example.
10. What is a pointer? How does a pointer variable be declared and initialized?

PART B

(Answer one full question from each module, each question carries 6 marks)

MODULE I

11. Describe the benefits and drawbacks of high level, assembly and machine level languages. (6)

OR

12. What is an operator? List and explain the various types of operators. (6)

MODULE II

13. Explain *if*, *if-else* and *nested if-else* statements in C program with suitable examples. (6)

OR

14. Write a menu driven C program to find the area of a rectangle, a triangle and a circle. (6)

MODULE III

15. Define string. How is it declared and initialized? Write in detail the string input/output functions. (6)

OR

16. Write a C program to perform matrix multiplication. (6)

MODULE IV

17. a) What is structure? Explain the C syntax of structure declaration with an example. (3)
b) Write a C program to read and print Emp_id, Name and Salary of 'N' employees using structure. (3)

OR

18. What is meant by storage class of a variable? With an example, compare the external and automatic storage class variables. (6)

MODULE V

19. a) Define void pointer, wild pointer and constant pointer. (3)
b) Write a C program to swap two numbers using call by address(pointers or reference) method. (3)

OR

20. Illustrate the file operations and its functions with an example. (6)
