32. a. Summarize the various file opening modes in C with example. (8 Marks)

(OR)

b.i. Discuss in detail about dynamic memory allocation. (4 Marks)

ii. Differentiate between structure and union.

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Reg. No.															

B.Tech. DEGREE EXAMINATION, MAY 2019
First & Second Semester

18CSS101J – PROGRAMMING FOR PROBLEM SOLVING
(For the candidates admitted during the academic year 2018-2019)

Note:
(i) **Part - A** should be answered in OMR sheet within first 45 minutes and OMR sheet should be handed over to hall invigilator at the end of 45th minute.
(ii) **Part - B** and **Part - C** should be answered in answer booklet.

Time: Three Hours Max. Marks: 100

PART – A (20 × 1 = 20 Marks)
Answer ALL Questions

1. The format identifier "%d" is used for _____ data type?
   (A) char (B) int
   (C) float (D) double

2. The first step in problem solving is _____.
   (A) Understand the problem (B) Identify the problem
   (C) Developing flowchart (D) Listing the possible outcome

3. The result of operation performed by _____ operator is true only when both the operands are true
   (A) && (B) ||
   (C) ! (D) ?:

4. The memory space needed for a float data type is
   (A) 2 bytes (B) 4 bytes
   (C) 10 bytes (D) 12 bytes

5. The _____ statement when executed in a switch statement causes immediate exit from the structure
   (A) *goto* (B) *default*
   (C) *break* (D) *switch*

6. The *'while'* is an _____ loop statement.
   (A) Entry-controlled (B) Exit-controlled
   (C) Indefinite repetition (D) Definite repetition

7. The array elements are always stored in _____ memory locations.
   (A) Sequential (B) Random
   (C) Sequential and random (D) Direct

8. The _____ statement is used to skip a part of the statements in a loop
   (A) continue (B) break
   (C) goto (D) switch

9. How do you initialize an array in C?
(A) int *arr*[3] = (1,2,3); (B) int *arr*(3) = {1,2,3};
(C) int *arr*[3] = {1,2,3}; (D) int *arr*(3) = (1,2,3);

10. The string function that is used to join two strings is
(A) strlen( ) (B) strcat( )
(C) strcmp( ) (D) strcpy( )

11. _____ header file has to be used inorder to use string function.
(A) conio.h (B) string.h
(C) stdlib.h (D) stdio.h

12. What is the return type of the function with prototype: "int func(char x, float v, double t);"
(A) char (B) float
(C) int (D) double

13. Which of the following is the proper declaration of a pointer?
(A) int *x*; (B) int *&x;*
(C) *ptr x*; (D) int **x;*

14. Which of the following accesses a variable in structure $*b$?
(A) $b \rightarrow$ var; (B) $b \cdot$ var;
(C) $b -$ var; (D) $b >$ var;

15. Which is not a storage class specifier in C?
(A) Volatile (B) Auto
(C) Register (D) Static

16. Which of the following are themselves a collection of different data types?
(A) string (B) structure
(C) char (D) int

17. Identify the incorrect file opening mode from the following
(A) r (B) w
(C) x (D) a

18. What is the default return type if it is not specified in function definition?
(A) void (B) int
(C) double (D) short int

19. Which loop is most suitable to first perform the operation and then test the condition?
(A) for loop (B) while loop
(C) do-while loop (D) nested for loop

20. The function calling itself directly or indirectly is called as
(A) Function call (B) Function prototype
(C) Recursion (D) Call by value

PART – B (5 × 4 = 20 Marks)
Answer ANY FIVE Questions

21. Define algorithm. Give the characteristics of the algorithm.

22. Write a C program to get two numbers as input from the user and swap them.

23. Differentiate between entry controlled and exit controlled loop.

24. Illustrate the concept of nested-for loop with suitable example.

25. Write a C program to concatenate two strings using strcat( ) function.

26. Categorize the basic operations that can be performed on a file with suitable examples.

27. Write a C program to read 10 numbers and reverse it using array.

PART – C (5 × 12 = 60 Marks)
Answer ALL Questions

28. a. Write the algorithm, pseudocode and draw the flowchart to find the factorial of a given number.

(OR)

b.i. Discuss the various storage classes in C with example program. (8 Marks)

ii. Write a C program to find the roots of a quadratic equation. (4 Marks)

29. a. Write a C program to print the day of the week using switch case.

(OR)

b.i. Discuss for loop, while loop and do-while loop with syntax. (8 Marks)

ii. Write a C program to print the sum of 'n' even numbers using for loop. (4 Marks)

30. a. Illustrate functions using call by value and call by reference method with examples.

(OR)

b.i. Write a C program to enter 'n' elements in an array and find the second smallest number from an array. (8 Marks)

ii. Write a C program to convert the given string (srmist) from lower to upper case. (4 Marks)

31. a. Write a C program to count vowels and consonants in a string using pointer.

(OR)

b.i. Discuss about function pointer and array of function pointers with an example. (8 Marks)

ii. Classify the various preprocessor directives available in C. (4 Marks)