18CSS101J 1 SEM - End sem paper

Programming For Problem Solving (SRM Institute of Science and Technology)

Reg. No.														

B.Tech. DEGREE EXAMINATION, JANUARY 2019
First 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 two forms of integer types are
   (A) Singed and unsigned (B) Long and double
   (C) Short and double (D) Signed and enum

2. To use sqrt function, we need to use the following header
   (A) conio.h (B) stdlib.h
   (C) iostream.h (D) math.h

3. A bitwise operator stands for
   (A) Right shift (B) One's complement
   (C) Bitwise exclusive OR (D) Bitwise inclusive OR

4. The escape sequence \t means
   (A) Vertical tab (B) Horizontal tab
   (C) Backspace (D) Formfeed

5. The condition when break statement is not used in the switch case statement is called
   (A) Fall off (B) Fall through
   (C) Fall out (D) Falling off

6. The continue statement is applicable to
   (A) Only loops (B) Loops and switch
   (C) Switch only (D) Control statements

7. An example for unconditional statement is
   (A) If statement (B) While
   (C) For (D) Goto

8. The array size for char pattern = *{'k', 'p', 'l', 'd', '\o'}* is
   (A) 6 (B) 4
   (C) 5 (D) 3

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

10. In order to use string functions, we need which header file
    (A) conio.h (B) stdio.h
    (C) stdlib.h (D) string.h

11. The size of the following array int arr [20] [3] is
    (A) 40 (B) 23
    (C) 60 (D) 50

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

13. A Null directive is of the from
    (A) # (B) # #
    (C) # include (D) # include <NULL>

14. The function int tolower (int c) converts
    (A) c into lower case (B) converts c from lower case to upper case
    (C) c into upper case (D) c into integer

15. The preprocessor directive used for processing data and time is
    (A) datatime.h (B) date.h
    (C) time.h (D) dated.h

16. In a function, if return type is omitted, it is assumed to return
    (A) Null (B) Integer
    (C) Double (D) Void

17. A collection of different types of variables is referred to as
    (A) Structures (B) Arrays
    (C) Stacks (D) Queues

18. Members of the union are accessed by
    (A) Union-name → member (B) Union-name = member
    (C) Union-name ⇒ member (D) Union-name $ member

19. The line void free (void * p)
    (A) Allocates the space pointed to by p (B) Deallocates the space pointed to by p
    (C) Terminates the program abruptly (D) Sets null value to p

20. Unions provide a way to
    (A) Manipulate different kinds of data in a single area of storage (B) Save same kind of data in continuous storage
    (C) Save different types of data in different areas (D) Save data of same types

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

21. Define an algorithm. Write an algorithm to accept an input from the user and calculate the sum of the squares.

22. Differentiate between entry controlled and exit controlled loop.

23. Write a C program to find the factorial of a given number using recursion.

24. Write a C program to reverse an array using pointers.

25. Compare and contrast calloc ( ) and malloc ( ).

26. Sketch a flowchart to find the sum of n numbers and write the pseudo code for it.

27. Consider a structure book with the members title, author, publication and price. Display the book details by initializing the structure members and by getting input from the user.

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

28. a.i. State the rules for writing a pseudo code. Draw a flow chart for converting from celsius to Fahrenheit. (8 Marks)

    ii. Differentiate between critical and creative thinking. (4 Marks)

(OR)

    b. List down the various storage classes in C. Explain Extern and Static storage classes with suitable examples.

29. a. Classify the various decision making constructs in C. Explain with suitable examples.

(OR)

    b.i. Write a C program to get 'n' numbers as input from the user and sort in ascending order. (8 Marks)

    ii. Write short notes on conditional operators. Give suitable examples. (4 Marks)

30. a. Illustrate the various function prototypes with example.

(OR)

    b. Write a C program to read two matrices a and b as input from the user and get the option from user as 1 for addition and 2 for transpose of matrix a.

31. a.i. Write a C program to swap two elements using call by reference. (8 Marks)

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

(OR)

    b. Write short notes on
    (i) Constant pointers
    (ii) Function pointers
    (iii) Null pointers

32. a. Write a C program to find the number of characters in a given name using the structure.

(OR)

    b. Summarize the various file operations used in C. Give suitable examples.

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