Reg. No.															

B.Tech/ M.Tech (Integrated) DEGREE EXAMINATION, DECEMBER 2023
Second Semester

21CSS101J – PROGRAMMING FOR PROBLEM SOLVING
(For the candidates admitted from the academic year 2022-2023 onwards)

Note:
(i)   **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40th minute.
(ii)   **Part - B** and **Part - C** should be answered in answer booklet.

Time: 3 Hours   Max. Marks: 75

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

	Marks	BL	CO	PO

1. Which of the following is not a relational operator?   (Marks 1, BL 1, CO 1, PO 1)
   (A) $>=$ (B) $==$
   (C) $*=$ (D) $!=$

2. Find the output of the statement: $X = 7 * 6 \% 15 / 9$.   (Marks 1, BL 2, CO 1, PO 1)
   (A) 1   (B) 3
   (C) 2   (D) 4

3. What is the output of the given statement?   (Marks 1, BL 2, CO 1, PO 1)
       printf ("%d", + + 2);
   (A) 2   (B) 3
   (C) 1   (D) Compiler error-Lvalue required

4. Result of 16>>2 is   (Marks 1, BL 2, CO 1, PO 2)
   (A) 0   (B) 3
   (C) 4   (D) 8

5. Which of the following type of the variable is not supported by switch-case?   (Marks 1, BL 1, CO 2, PO 1)
   (A) int   (B) char
   (C) float   (D) short

6. Correct way to initialize an array in C language is   (Marks 1, BL 1, CO 2, PO 1)
   (A) int a = {1,2,3};   (B) int a[3] = {1,2,3};
   (C) int a[ ] = new int [3];   (D) int a(3) = [1,2,3];

7. Find the output of following C code.   (Marks 1, BL 2, CO 2, PO 2)
   ```
   {
     int c;
     for (c = 1; c < = 5;)
         printf ("%d", + + c);
   }
   ```
   (A) 1 2 3 4 5   (B) 2 3 4 5
   (C) 2 3 4 5 6   (D) 1 2 3 4

8. An array is declared as *int a[ ] = {0, 2, 4, 6, 8, 10}*. Find the value of a[a[2]]   1   2   2   2
   - (A) 8
   - (B) 4
   - (C) 2
   - (D) 6

9. Find the output of following C code.   1   2   3   2
   ```
   char str [ ] = {'h', 'e', 'l', 'l', '\0', '0'};
   printf ("%d %d", strlen(str), sizeof(str));
   ```
   - (A) 4 4
   - (B) 4 6
   - (C) 6 4
   - (D) 6 6

10. What is the output of the following C code?   1   2   3   2
    ```
    char *p = "abc";
    printf ("%s %s", p, p+1);
    ```
    - (A) abc abc
    - (B) bc bc
    - (C) bc c
    - (D) abc bc

11. Identify the error in the following function declaration statement.   1   1   4   1
    ```
    void function (int);
    ```
    - (A) Has one argument
    - (B) Has no argument
    - (C) Not returning any values
    - (D) Both (A) and (C)

12. The function used to read multiword string is _____.   1   1   4   1
    - (A) *scanf( )*
    - (B) *printf( )*
    - (C) *gets( )*
    - (D) *puts( )*

13. What is the output of the following Python code?   1   2   5   2
    ```
    X = True
    Y = False
    Print (X & Y)
    ```
    - (A) True
    - (B) 1
    - (C) 0
    - (D) False

14. _____ is used for single line comment in Python.   1   1   5   1
    - (A) ||
    - (B) !
    - (C) #
    - (D) |* *|

15. Find the output of the following python code.   1   2   5   2
    ```
    var = 10
    print (type (var))
    var = "Hello"
    print (type (var))
    ```
    - (A) str int
    - (B) int int
    - (C) str str
    - (D) int str

16. Resultant data type of the sorted tuple in Python is   1   1   5   1
    - (A) List
    - (B) Tuple
    - (C) String
    - (D) int

17. The number of elements in the series "S1" is _____.
    `>>> S1 = pd. Series(range(6))`
    `>>> print(S1)`
    (A) 4 (B) 5
    (C) 6 (D) 7

18. Attribute of Numpy array is
    (A) objects, type, list (B) objects, nonvectorization
    (C) unicode, shape (D) shape, dtype, ndim

19. Which of the following is used to convert Numpy array into list?
    (A) *array.list( )* (B) *array.list*
    (C) *list (array)* (D) *list.array*

20. Which of the data structure has both row index and column index?
    (A) List (B) Series
    (C) DataFrame (D) Tuple

PART – B (5 × 8 = 40 Marks)
Answer ALL Questions

	Marks	BL	CO	PO

21. a.i. Write a pseudo-code to find the factorial of a given number. | 4 | 3 | 1 | 2

   ii. Write the difference between pre-increment and post-increment operator in C language. Give an example. | 4 | 3 | 1 | 2

(OR)

   b. Compare the logical operator and bitwise operator with suitable example in C language. | 8 | 3 | 1 | 2

22. a. Write a C program to find whether the given number is palindrome or not. Note: Input - integer format. | 8 | 4 | 2 | 2

(OR)

   b. Write a C program to perform matrix addition using pointers with necessary conditions. | 8 | 4 | 2 | 2

23. a. Explain any four string functions with suitable example in C. | 8 | 4 | 3 | 2

(OR)

   b. Is passing an array to a function comes under call-by-value (or) call-by-reference? Justify your answer with examples. | 8 | 4 | 4 | 2

24. a. Explain about any four list functions used in Python programming with suitable examples. | 8 | 4 | 5 | 2

(OR)

   b. Write a Python program to print the prime numbers between the range [0, 100] without using built-in function. | 8 | 3 | 5 | 2

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	Marks	BL	CO	PO

25. a.i. Write a python program to create pandas dataframe using list. — 4   4   5   2

   ii. Compare Numpy and Pandas. — 4   4   5   2

<center>(OR)</center>

  b.i. Compare the elements of two pandas series using python programming. — 4   4   5   2

   ii. Describe about Numpy. — 4   2   5   2

<center>

PART – C (1 × 15 = 15 Marks)

Answer **ANY ONE** Question
</center>

	Marks	BL	CO	PO

26.i. Write a C program to read two integer values and print true if both the numbers end with the same digit, otherwise print false.
Example: Input 1 : 698
             Input 2 : 768
             Output : true — 8   3   2   2

   ii. Write a C program to count the number of vowels present in a given sentence. — 7   3   3   2

27.i. Write a Python program to get key and value for two different list respectively. Merge these lists into dictionary and print the sorted dictionary with key order. — 8   3   5   2

   ii. Write a Python program to create a list for the user given elements and find the sum of elements in the list. — 7   3   5   2

<center>* * * * *</center>