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B.Tech/ M.Tech (Integrated) DEGREE EXAMINATION, JANUARY 2023
First Semester

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

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. Find the output for the following statement.

```
printf ("%d", sizeof ("Hello"));
```

(A) 5 (B) 6
(C) 1 (D) 2

1 1 1 1
2. What is the output for the following expression in C?

```
n = 5 - 2 * 7 - 9;
```

(A) -18 (B) 12
(C) 9 (D) 1

1 2 1 1
3. Determine the correct output.

```
float c = 3.14;  
printf ("%f", c%2);
```

(A) 1.0 (B) 0
(C) Compile error (D) 0.14

1 2 1 1
4. Find the meaning of following statement:

```
f = (x > y)? x : y;
```

(A) f points to max of x & y (B) f points to min of x & y
(C) f points to addition of x & y (D) Compile error

1 2 1 2
5. The 'continue' statement cannot be used with

(A) while (B) do while
(C) for (D) switch case

1 1 2 1
6. Find the correct one to access the 3rd element in an array.

(A) * a + 3 (B) * (a + 3)
(C) * (* a + 3) (D) & (a + 3)

1 1 2 1
7. Find the output for the following C code.

```
for (K = 1; K <= 5; K ++);  
{  
    printf ("%d", K);  
}
```

(A) 1 2 3 4 5 (B) 1 2 3 4
(C) 6 (D) 5

1 2 2 2

8. Size of integer pointer and character pointer in C for 16 bit processor is 1 2 2 2
 (A) 2 1 (B) 2 2
 (C) 4 1 (D) 4 2
9. Expected output for the following code is 1 2 3 2

```
char str[] = {'g', 'l', 'o', 'b', '\0', 'a', 'l'};
printf("%s", str);
```

 (A) global (B) glob
 (C) globloal (D) al
10. The operator used to get value at an address stored in a pointer variable is 1 2 3 2
 (A) * (B) &
 (C) && (D) ~
11. The keyword used to transfer the control from a function back to the calling function in C is 1 1 4 1
 (A) goto (B) back
 (C) return (D) goback
12. If both the strings are same, a string function *strcmp()* returns _____. 1 1 4 1
 (A) 1 (B) -1
 (C) 2 (D) 0
13. Keyword used for function in Python language is 1 1 5 1
 (A) function (B) def
 (C) fun (D) define
14. The following python code will print _____, _____. 1 2 5 2

```
print (type (5/2))
print (type 5//2))
```

 (A) float int (B) float float
 (C) int float (D) int int
15. Find the length of the following list in python 1 2 5 2

```
len (["hello", 2, 4, 6])
```

 (A) 8 (B) 6
 (C) 4 (D) 3
16. Representation of python tuple is 1 1 5 1
 (A) {} (B) {1, 2, 3}
 (C) [1, 2, 3] (D) (1, 2, 3)
17. Number of elements present in the series S1 is 1 1 5 1

```
S1 = pd.series (range (1, 6))
print(S1)
```

 (A) 4 (B) 5
 (C) 6 (D) 7
18. Numpy is often used along with packages like _____. 1 1 5 1
 (A) Node.js (B) Matplotlib
 (C) SciPy (D) Both (B) and (C)

19. Size attribute in Numpy is used to find _____.	1	1	5	1
(A) shape				
(B) date and time				
(C) objects				
(D) number of items				
20. Library used to create data frame is	1	2	5	2
(A) Sklearn				
(B) Data frame				
(C) Pandas				
(D) Random				

PART – B (5 × 8 = 40 Marks)

Answer ALL Questions

	Marks	BL	CO	PO
21. a. Describe various storage classes in C programming with suitable example.	8	3	1	2
(OR)				
b. Describe about pre-increment, post-increment, pre-decrement, post-decrement, conditional operators, each with suitable example.	8	3	1	2
22. a.i. Write a C program to find the factorial of a given number.	4	3	2	2
ii. Write the necessary conditions for switch-case in C.	4	4	2	2
(OR)				
b. Explain about	4+4	3	2	2
(i) void pointer with an example in C				
(ii) NULL pointer with an example in C				
23. a. Write a C program to find whether the given string is palindrome or not. Explain the string functions used in this program.	8	4	3	2
(OR)				
b. Explain the concept of passing the array as an argument to function. Illustrate with C program to find the sum two matrices.	8	4	4	2
24. a. Describe any four operations performed on tuples in Python programming.	8	3	5	2
(OR)				
b. Write a Python program to print the following Floyd triangle.	8	3	5	2
1				
2 3				
4 5 6				
25. a.i. Explain the significant features of the pandas library.	4	4	5	2
ii. Write a Python program to create a Numpy array filled with all zeros.	4	3	5	2
(OR)				
b.i. List out various features of Numpy.	4	4	5	2
ii. Describe about the different types of data structures in pandas.				

PART – C ($1 \times 15 = 15$ Marks)

Answer ANY ONE Question

Marks BL CO PO

- 26.i. The National Highways Department announces a scheme for four wheeler riders in the toll gate for its 50th year celebration. If the vehicle number is divisible by both 7 and 3, then they should pay one-third of the fee. If the vehicle number is divisible by 7 or 3, then they should pay half of the fee. Otherwise they have to pay full fees. Write a C program for the given scenario. 8 3 2 2
- ii. Write a C program to replace all vowels with star (*) and print the output. 7 3 3 2
- 27.i. Write a Python program to check whether the given list is in sorted order or not. If the given list is in sorted order then print true, else print false. 8 4 5 2
- ii. Write a python program to create two sets Set1 and Set2 by getting input from user and determine whether the given sets Set1 and Set2 are disjoint or not. 7 4 5 2

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