



Pps sqp - Sample paper

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



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

21CSS101J - PROGRAMMING FOR PROBLEM SOLVING
(For the candidates admitted from the academic year 2021-2022 & 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. What is the first step in the problem-solving process? (A) Generate potential solutions (B) Define the problem (C) Implement the solution (D) Evaluate alternatives	1	1	1	1
2. What is an algorithm? (A) A step-by-step procedure to solve a problem (B) A graphical representation of a process (C) A programming language (D) A flowchart symbol	1	2	1	1
3. Which of the following is NOT a characteristic of a good algorithm? (A) Finiteness (B) Determinism (C) Ambiguity (D) Feasibility	1	4	1	1
4. What is a flowchart? (A) A programming language (B) A step-by-step procedure to solve a problem (C) A graphical representation of a process or algorithm (D) A function in a programming language	1	2	1	1
5. Which flowchart symbol is used to represent a decision point in a process? (A) Rectangle (B) Circle (C) Arrow (D) Diamond	1	1	2	1
6. What does the scanf() function do in C? (A) Prints output to the console (B) Reads input from the user (C) Copies one string to another (D) Concatenates two strings	1	2	2	1
7. How do you compare two strings in C? (A) str1 == str2 (B) strcmp(str1, str2) (C) strcmp(str1, str2) (D) strcmpare(str1, str2)	1	3	2	1
8. What will be the output of the expression 11 ^ 5? (A) 12 (B) 13 (C) 10 (D) 11	1	3	2	2

9. What is the purpose of the `strlen()` function in C? 1 2 3 1
 (A) To compare two strings (B) To concatenate two strings
 (C) To calculate the length of a string (D) To convert a string to uppercase string
10. Which library should be included to use the `strcpy()` function in C? 1 1 3 1
 (A) `stdlib.h` (B) `stdio.h`
 (C) `string.h` (D) `math.h`
11. What is the correct way to declare a string variable in C? 1 1 3 1
 (A) `string s;` (B) `char s[];`
 (C) `char* s;` (D) `str s;`
12. `s = 'foobar'`,
 Then what is the output of `s[-2]` 1 4 3 2
 (A) o (B) r
 (C) b (D) a
13. We can combine strings and numbers by using the _____ method 1 1 4 2
 (A) `combine()` (B) `concat()`
 (C) `index()` (D) `format()`
14. Which formatted output value is used to print hexadecimal values? 1 1 4 2
 (A) `%s` (B) `%o`
 (C) `%h` (D) `%x`
15. Which string function converts a character into an integer? 1 1 4 2
 (A) `len()` (B) `str()`
 (C) `ord()` (D) `char()`
16. With respect to String operation, the `+` operator _____ the given strings. 1 1 4 2
 (A) Adds (B) Concatenates
 (C) Multiplies (D) Compares
17. _____ is used when data is in Tabular format. 1 1 5 2
 (A) NumPy (B) Pandas
 (C) Matplotlib (D) Random
18. The Interface of Matplotlib used for data visualization is 1 1 5 2
 (A) Seaborn (B) Matlab
 (C) Pyplot (D) Pandas
19. _____ is a high level API built on TensorFlow. 1 1 5 2
 (A) PyBrain (B) Keras
 (C) Pandas (D) Scrappy
20. Which of the following module is to be imported to create Series? 1 1 5 2
 (A) NumPy (B) Matplotlib
 (C) Pandas (D) Random

PART – B (5 × 8 = 40 Marks)

Answer ALL Questions

	Marks	BL	CO	PO
21. a. Define problem-solving and discuss the six steps involved in problem-solving.	8	2	1	2
(OR)				
b.i. Define algorithm, and describe the characteristics of an algorithm?	4	2	1	2
ii. Mention flowchart, and discuss the symbols/shapes are commonly used in flowcharts?	4	2	1	2
22. a. Analyze the various Storage Classes in C with suitable examples.	8	4	2	2
(OR)				
b. Explain with example ++i , i++, --i, & i--.	8	4	2	2
23. a. Describe function and its types in C? And explain recursion function with an example.	8	3	3	2
(OR)				
b. Write a C Program to replace all VOWELS with star (*) and print the output.	8	3	3	2
24. a. Describe about the different types of data structures in python.	8	2	4	2
(OR)				
b. Explain the significant features of the Pandas and Numpy library.	8	2	4	2
25. a. Explain function and module with suitable example.	8	2	5	2
(OR)				
b. Explain list and tuple with suitable example.	8	2	5	2

PART – C (1 × 15 = 15 Marks)

Answer ANY ONE Questions

	Marks	BL	CO	PO
26. (i) Write a C program to calculate the sum of digits of a five digit number.	15	3	2	2
(ii) Mr. Bob has been deputed as the Election officer for the Tamil Nadu State Election. He wanted to perform an analysis to check whether a candidate is eligible for voting when he/she enters his/her age. Write a C program to read the age of a candidate and determine whether it is eligible for casting his/her own vote.				
27. What is Dictionary? Explain Python dictionaries in detail discussing its operations and methods.	15	2	4	2

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