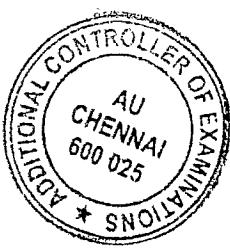


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ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)
B.E., (Full Time) - END SEMESTER EXAMINATIONS, NOV/DEC 2024

B.E., Computer Science and Engineering
Semester I

CS6101- Programming with C

(RUSA R- 2018)

Time: 180 minutes

Answer ALL Questions

Max.Marks : 100

PART- A (10 x 2 = 20 Marks)

- | | | |
|----|--|---|
| 1 | What are the main steps involved in executing a program from source code to running application? | 2 |
| 2 | State any four special features of C Language | 2 |
| 3 | What is the purpose of the conditional operator (?:) in programming? | 2 |
| 4 | What is the role of header files in C language | 2 |
| 5 | Predict the output of the following C Code
<pre>#include <stdio.h> int main() { int arr[] = {10, 20, 30, 40, 50}; int *ptr = arr; printf("%d %d %d\n", *ptr, *(ptr + 2), *(arr + 4)); return 0; }</pre> | 2 |
| 6 | How does a do-while loop differ from a while loop? | 2 |
| 7 | Write a code snippet to declare a 2x3 multi-dimensional array and initialize it with values.. | 2 |
| 8 | State how a pointer variable differ from a variable? | 2 |
| 9 | Write a function in C to calculate the factorial of a number using recursion. | 2 |
| 10 | What is enumerated datatype? | 2 |

PART- B (8 x 8 = 64 Marks) (any 8 questions)

- | | | |
|----|--|----|
| 11 | (i) What is meant by precedence and associativity of operators in C ? Explain with an example. | 4. |
|----|--|----|

- (ii) Exemplify the use of 'break' and 'continue' statements in C with suitable example. 4
- 12 (i) Explain how logical relationship is checked in C program? 4
(ii) What are formatted input and output statements in C? Give suitable examples. 4
- 13 (i) How do you store and access elements in a multi-dimensional array? Provide an example. 4
(ii) Write a C program to print the following on the screen using nested loops 4
- 1
2 3
4 5 6
7 8 9 10
- 14 (i) Write a C program to print the sum of the following series up to n terms where n is given by the user: $x - x^3/3! + x^5/5! - \dots$ (The value of x is given by the user.) 4
(ii) Write a C program to find and print the factorial of the first 'n' numbers that are not divisible by 2 or 3. 4
- 15 Write a C program to sort the given list of elements and to find the second largest element in an array. 8
- 16 Explain in detail how the data is passed to a function by writing a function that takes a decimal number and base as argument and returns the equivalent number of the given base. 8
- 17 (i) Explain the use of string operators in C with examples 4
(ii) Write a program that uses a function to add a string to the end of another string without using any library function 4
- 18 Explain in detail about the pointers in C and Write a program to swap two numbers using pointers. 8
- 19 Write a C program to find the maximum and minimum elements in a sorted array by passing the array pointer to a subroutine. 8
- 20 Explain the use of various pre-processor directives with suitable examples. 8
- 21 Brief about how the files are handled in C programs with appropriate formats 8
- 22 Discuss in details about the dynamic memory allocation functions in C with example. 8



PART- C (2 x 8 = 16 Marks)

- 23 Write a C program using structures to store the data of 'n' books, where 'n' is given by the user (use dynamic memory allocation). Include a menu that will allow the user to select any of the following features: 8
- Use a function to display the book information while getting the book with the maximum and minimum price.
 - Use a function to display the book records in alphabetical order by title.
 - Use a function to display the book records by their genre (e.g., Fiction, Non-fiction, Science, etc.).
- 24 Discuss how binary files are created and managed in C with a program to implement the following: 8
- Create two files namely source and destination.
 - Read a character from the source file and write the same into the destination file till end-of-file is not reached.
 - Delete the source file at last.

