

Reg. No. :

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Question Paper Code : 71069

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2023.

Seventh Semester

Agriculture Engineering

OCS 752 – INTRODUCTION TO C PROGRAMMING

(Common to: Biomedical Engineering/Civil Engineering/Electrical and Electronics Engineering/Electronics and Communication Engineering/Electronics and Instrumentation Engineering/Electronics and Telecommunication Engineering/Instrumentation and Control Engineering/Medical Electronics/Bio Technology/Fashion Technology/Food Technology/Handloom and Textile Technology/Pharmaceutical Technology/Textile Chemistry/Textile Technology)

(Regulations 2017)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Write the syntax for multiple assignments in C. In which order the assignments be carried out?
2. Compare and contrast the use of *if-else* statement with the use of *?:* Operator.
3. Define an array. How the individual elements of an array can be accessed?
4. Give the syntax of declaring and initializing a two dimensional array.
5. State the role of null character in String.
6. What is a pointer? What value will be stored in a pointer?
7. Write the syntax of Function Prototype.
8. Define a recursive function.
9. Compare and contrast structure and arrays.
10. Write the syntax for passing an entire structure as argument to a function.

PART B — (5 × 13 = 65 marks)

11. (a) List and explain the different types of operators available in C with their associativity.

Or

- (b) Illustrate the working of different types of looping statements available in C with syntax.
12. (a) Illustrate the following functionalities with respect to arrays with suitable code:
- (i) Create an integer array of ten elements. (1)
 - (ii) Insert an element at the specified position in the array. (3)
 - (iii) Delete an element from the array. (3)
 - (iv) Print the position of the specified element. (3)
 - (v) Print all the elements in the array. (3)

Or

- (b) Write code to perform the following functionalities on two dimensional array:
- (i) Create a two dimensional integer array and input array elements. (3)
 - (ii) Find row-wise and column-wise sum of the array elements. (5)
 - (iii) Print the elements of the array and their row-wise and column-wise sum in matrix form. (5)
13. (a) Write code to perform the following functionalities without using built-in functions on Strings and output the result:
- (i) Concatenate the two given strings. (3)
 - (ii) Reverse the contents of a given string. (3)
 - (iii) Insert a given substring in the specified position in the string. (3)
 - (iv) Replace all occurrences of a particular character in the string with a given character. (4)

Or

- (b) List and explain the pointer operators. Illustrate the operations that can be performed on pointer variables.

14. (a) Illustrate the steps involved in creating and using a function with an example.

Or

- (b) Explain the different parameter passing methods in C with suitable example.
15. (a) Define a Structure. Explain about the following steps with syntax: (2)
- (i) Defining a structure (4)
 - (ii) Declaring a structure variable (3)
 - (iii) Accessing the members of a structure (4)

Or

- (b) Explain about the creation and usage of nested structures.

PART C — (1 × 15 = 15 marks)

16. (a) Develop an application in C with the following functionalities:
- (i) Create a structure called 'Person' with members such as name, date-of-birth, age, height, weight and BMI. (4)
 - (ii) Input name, date-of-birth, height and weight for 'n' persons. (3)
 - (iii) Calculate age and BMI for 'n' persons using functions. (5)
 - (iv) Display all the details of 'n' persons. (3)

Or

- (b) Develop a C program to perform the following:
- (i) Create an array of strings to hold the names of 'n' students. (4)
 - (ii) Sort the student names in alphabetical order (use function for sorting). (7)
 - (iii) Print the sorted list of names. (4)