



POP QB - Question bank

Principles of programming using C (Visvesvaraya Technological University)



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Department of Computer Science and Engineering

Vision: Preparing better Computer Professionals for a Real World

QUESTION BANK

SUBJECT TITLE	PRINCIPLES OF PROGRAMMING USING C		
SUBJECT TYPE	CORE		
SUBJECT CODE	BPOP103		
ACADEMIC YEAR	2023-24	BATCH	2023-2027
SCHEME	NEP scheme (Effective from the academic year 2023 -2027)		
SEMESTER	I		

Q. No.	Questions-MODULE1
1	Define Algorithm . Write an algorithm to find the area and perimeter of a circle
2	What is Computer. Describe the various generations of computers
3	Discuss basic data types used in C
4	Explain the basic structure of a C program with an example
5	What is an identifier (variable)? What are the rules to construct identifier(variable)? Classify the following as valid/invalid Identifiers. i) num2 ii) \$num1 iii) +add iv) a_2 v) 199_space vi) _apple vii) #12
6	What is variable? List the restrictions on the variable names /Define variable. Explain the rules for constricting variables in C language/ Define i)variable ii) Constant iii) Associativity iv)Precedence
7	Explain the following operators in C language i) Relational ii) Logical iii) Conditional

8	What is an expression? Evaluate the following expressions i) $100 \% 20 <= 20 - 5 + 100 \% 10 - 20 == 5 > 1 != 20$ ii) $a + = b * = C - = 5$ where $a=3$, $b=5$ and $c=8$
9	Convert the following mathematical expression into C equivalent i) $area = s(s-a)(s-b)(s-c)$ ii) $x = -b + b^2 - 4ac$
10	What is an assignment statement? Give the general form of an assignment statement

Q. No.	Questions-MODULE2
1	List all conditional control statements used in C. Explain any two with syntax and example
2	Write a C program that reads from the user an arithmetic operator and two operands, perform the corresponding arithmetic operation on the operands using switch statement
3	Implement a C program to find the reverse of an integer number and check whether it is palindrome or not
4	What are unconditional control statements? Explain any two with syntax and example
5	Write a program in C to display the grade based on the marks as follows: <div style="display: flex; justify-content: space-between;"> <div>Marks</div> <div>Grades</div> </div> 0 to 39 F 40 to 49 E 50 to 59 D 60 to 69 C 70 to 79 B 80 to 89 A 90 to 100 O
6	Write a C Program to find the sum of natural numbers from 1 to N using while loop
7	Explain break and continue statements with example
8	Write a C Program to find all possible roots of a quadratic equation and print them with appropriate messages
9	Write a calculator program in C language to do simple operations like addition, subtraction, multiplication and division. Use switch statement in your program
10	Evaluate <pre>i=1 L: (i>2) { Printf("Saturday");</pre>

	<pre>i=i-1; goto L; } Printf("Sunday");</pre> <p>Explain your result briefly.</p>
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Q. No.	Questions-MODULE3
1	What is array? Explain the declaration and initialization of one dimensional and two dimensional array with an example
2	Define array. Explain with suitable example how to declare and initialize 1D array
3	Write a C program to read N integers into an array A and to find the (i) sum of odd numbers (ii) sum of even numbers (iii) average of all numbers. Output the results computed with appropriate headings
4	Write a C program to search an element using linear and binary techniques
5	Write a C program for [consider integer data] (i) Bubble sort (ii) Linear search
6	Write a C program to find the transpose of a given matrix
7	What is string? Write a C program that reads a sentence and prints the frequency of each of the vowels and total count of consonants?
8	Define a string. Explain any 4 string library functions with syntax and example
9	Write a program to read N integers and to arrange them in ascending order using bubble sort technique
10	Write a C program to search a name in a given list using binary search technique

Q. No.	Questions-MODULE4
1	Define a function. List and explain the categories of user defined functions
2	Explain how call by value differs from call by reference while invoking a function
3	Write a C program to find the factorial of a number using functions
4	Write a program to find GCD and LCM of two numbers using concept of functions

5	Give the scope and life time of the following (i) External variable (ii) Static variable (iii) Automatic variable (iv) Register variable
6	What are the three possibilities of defining a user defined functions in „C“?
7	What is Recursion? Write a C program to compute polynomial co-efficient nCr using recursion
8	Write a C program for evaluating the binomial coefficients using a function factorial(n)
9	Explain recursion. and write a program to find nth term of Fibonacci series
10	List storage class specifiers. Explain any one of them

Q. No.	Questions-MODULE 5
1	What is structure? Explain the C syntax of structure declaration with example
2	Explain array of structure and structure within a structure with an example
3	Write a C program to maintain a record of „n“ students details using an array of structures with four fields (roll no, name, marks, and grade). Assume appropriate data type for each field. Print the marks of the student given the student's name as input.
4	Explain the array of pointers with example? or explain how pointers and arrays are related with example
5	What is a pointer? Write a C program to find the sum and mean of all elements in an array using pointer
6	Write a C program to swap two numbers using call by address (pointers or reference) method
7	What is preprocessor directive? Explain #define and #include preprocessor directives. Write a program that finds the addition of two squared numbers by defining macro for square(x)
8	Write note on i) Array within Structures ii) Array of structures
9	Write a C program that accepts a structure variable as a parameter to a function from a function call
10	Differentiate between structures and unions

Note:

- Questions shall be framed by consolidating comprehensively from the following sources
 - Exercise problems of textbooks/ references
 - Previous year question VTU exam Question paper. (Mark the year/exam beside the question)

- Questions by Experts during Interview/Academic Audit
 - Internet sources/ other Universities examination question papers.
 - Own / experience.
2. Questions shall follow all the Bloom's learning levels with appropriate action verbs
 3. There shall be a total of 50 questions considering 10 questions from each Module
 - 4.** Ensure the coverage of all COs