C programming for Problem Solving [BPOP13]

QUESTION BANK   PREAPRED BY: Amitha S K

Sl. No	Questions
1	Define **Algorithm**. Write an algorithm to find the area and perimeter of a Circle
	What is an Algorithm? Write an algorithm to find the largest of 3 numbers
	Compare pseudocode with an algorithm
2	Define **flowchar**t. Explain with an example
	Draw the flowchart and write a C program to compute simple interest
3	Explain the basic **structure of a C program** with an example
	Explain the block structure of a C program
	Write the general structure of C. Explain with an example
4	What is **Token**? What are the different types of token available in C language
5	Write and explain the basic concepts of a C program
6	What is an **identifier** (variable)? What are the rules to construct identifier (varible)? Classify the following as valid/invalid Identifiers. i)num2 ii) $num1 iii) +add iv) a_2 v) 199_space vi) _apple vii)#12
	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 with example, the various constants available in „C" language
8	List all the **operators** used in C. Give examples
	Explain any five operators used in C language
	What is an operator? List and explain various types of operators
	Explain the following operators in C language i) Relational ii) Logical iii) Conditional
9	What is an assignment statement? Give the general form of an assignment Statement
10	What are basic **data types** available in „C"? Write the significance of each data Type
	Write a C program that computes the size of int, float, double and char Variables
11	What is **type conversion**? Explain two types of conversion with examples
12	What are the formatted **input and output functions**. Explain with examples
	Write the guidelines to use scanf() and printf() functions in C language
	What is the purpose of **scanf() and printf()** statement ?
13	Write a C program in C to find the area and perimeter of a circle
14	Write a program in C to print the numbers from 4 to 9 and their squares
15	Write a C program in C to find the area and perimeter of a rectangle
16	Write a C program which takes as input p,t,r. Compute the simple interest and display the result

17	Write a C program to find the area of triangle when we know the lengths of all three of its sides
18	Write a C program to find the largest of three numbers using ternary operator

19	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

20	Convert the following mathematical expression into C equivalent
	  i) area= s(s-a)(s-b)(s-c)
	  ii) x = -b + b^2-4ac

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 C program to find the biggest of three numbers
6.	Explain switch statement with syntax and example
7.	List the differences between while loop and do-while loop. write a C program to find sum of Natura numbers from 1 to N using for loop
8.	Write a C program to find the factorial of a number using do-while ,where the number **n** is entered by user.
9.	What is two way selection statements? Explain if, if else, and cascaded if-else with examples.
10	Write a C program that takes from user an arithmetic operator („+", „-,, „*", or „/") and two operands . Perform corresponding arithmetic operation on the operands using switch statement
11	Explain with example ,the meaning of statement and block in a „C" program
12	Write a „C" program to demonstrate the use of unconditional goto statement
13	Explain with syntax ,if, if-else and nested if-else statements in „C" program
14	Explain with syntax , the different loops used in „C" program
15	Write a program in „C" to find the sum of „n" natural numbers without using any loops
16	Write a C program that takes three coefficients (a,b,and c) of a quadtatic equation ; (ax^2+bx+c) as input and compute all possible roots and print them with appropriate messages.
17	Show how break and continue statements are used in a C program, with example
18	Explain with examples formatted input output statements in C
19	Write a C program to find GCD of two numbers using ternary operator and for loop

	20	Write a calculator program in C language to do simple operations like addition, subtraction, multiplication and division. Use switch statement in your program
	21	What is dangling else problem? Explain how to handle tis in C programming

1	What is **array** ? Explain the declaration and initialization of one dimensional and two dimensional array with an example
	Define array.Explain with suitable example how to declare and initialize 1D array
2	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
3	Write a C program to search an element using linear and binary techniques
	Write a C program for [consider integer data] (i) Bubble sort (ii) Linear search
	Write a C program to read N numbers into an array & perform Linear search
	Write an algorithm and develop a C program to search an integer from N numbers in ascending order using binary searching technique
6	Write a C program to find the sum and average of n integer numbers
7	Write a C program to find the largest element in an array
	Write a C program to find the greatest number from two dimensional array
8	Write a C program to sort the elements by passing array as function argument
9	Define **string**. How string is declared and initialized? Explain string input/output functions with an example
10	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?
11	Write a C program to eliminate multiple spaces from a sentence and make it single
12	Explain with syntax and example ,the different string manipulation library functions with example
	Define a string. Explain any 4 string library functions with syntax and example
	Explain string manipulation library functions with their syntaxes
13	Define string. List out all string manipulation function. Explain any two with example
14	Write a C Program to implement string copy operation STRCOPY(str1,str2)
	that copies string str1 to another string str2 without using library function
	Write a C program to copy a string (combination of digits and alphabet) to another string (only alphabets)
15	Write a program to replace each constant in a string with the text one except letter „z‟ „Z‟ and „a‟ „A‟ . Thus the string "Programming in C is fun" should be modified as "Qsphsannjoh jo D jt gvo".

16	Write a C program to concatenate two strings without using built-in function strcat()
17	Explain with example (i) Character string (ii) String literal (iii) storage classes
18	How string is declared and initialized? Explain any four string manipulation functions with examples
19	Write a C program to check whether the given string is palindrome or not without using in built function
20	Write a C program to search a name in a given list using binary search technique

1	**What is function?** Explain the difference between user defined and library functions
2	Explain the different elements of user defined functions in detail
	Explain function call, function definition and function prototype with examples
3	What is function? Write a function to find the sum of two numbers
4	Explain two categories/types of argument passing techniques, with examples
	Differentiate between call by value and call by reference with examples
5	Explain the classification of user defined functions
	Define a function. List and explain the categories of user defined functions
	What is function? Explain the type of functions based on parameters
	What is function? Explain different classification of user defined functions based on parameter passing and return type with examples
6	Write a C function isprime(num) that accepts an integer argument and returns 1 if the argument is a prime or 0 otherwise. Write a program that invokes this function to generate prime numbers between the given ranges
	Write a c-program using function to check whether the given number is prime or not.
7	Write a program in „C" using functions to swap two numbers
	Write a program in C using functions to swap two numbers using global variables concept and call by reference concept.
8	What are actual parameters and formal parameters? Illustrate with example
9	Write a C program to find the factorial of a number using functions
10	Write a program to find GCD and LCM of two numbers using concept of functions
11	Give the scope and life time of the following (i)External variable (ii) Static variable (iii) Automatic variable (iv) Register variable
12	What are the three possibilities of defining a user defined functions in „C"?
13	What is **Recursion**? Write a C program to compute polynomial co-efficient n_{Cr} using recursion

	Write a C program for evaluating the binomial coefficients using a function factorial(n)
	Write a C program to find the binomial co-efficient a number using recursion
14	Define a recursion . Write a C recursive function for multiplying two integers where a function call is passed with two integers m and n
15	Write a C program to check a number is a prime or not using recursion
16	Write a C program to find the factorial of a number using recursion
17	Explain recursion. and write a program to find n^{th} term of Fibonacci series

	Write a C program to calculate the Fibonacci sequence using recursion functions
	Write a c-program using functions to generate the Fibonacci series.
18	What is recursion? Explain. Write a c-program using recursive function for Binary to Decimal Conversion.

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 name as input.
4	Write a C program to pass structure variable as function argument
5	Write a C program to store and print name, USN, subject and IA marks of students using structure
6	Explain the difference between array and structures
7	Explain with example how to create a structure using „typedef"
8	Write a program to maintain a record of „n" employee detail using an array of structures with three fields(id, name , salary) and print the details of employees whose salary is above 5000
9	What is **pointer** ? Explain how the pointer variable declared and initialized?
10	Explain the array of pointes with example? or Explain how pointers and arrays are related with example
11	What is a pointer? Write a C program to find the sum and mean of all elements in an array using pointer
12	Write a C program to swap two numbers using call by address(pointers or reference) method
13	Write a C program using pointers to compute the Sum, Mean and Standard deviation of all elements stored in an array of „n" real numbers
14	What is pointer? give the advantages and disadvantages of pointer data type