

C PROGRAMMING LANGUAGE
QUESTIONS For class XII

Set - B

1. Write a program, which reads a list of ten numbers and prints the list in reverse order.
2. Write a program, which reads marks of N students in an array and add a grace of 10 marks to every element of the array.
3. Write a program, which replaces every space in a given sentence with a hyphen.
4. Write a program that reads a line and counts the number of letters, vowels, consonants, words and white spaces present in the line.
5. Write a program to count the number of 'A's in a sentence.
6. Write a program that reads a string and prints this in reverse order.
7. Write a program that reads a string and checks if the string is palindromes or not.
8. Write a program for binary search of an element in an array.
9. Write a program to store 10 different numbers in an array and display them as
 - i. In reverse order.
 - ii. Ascending order by sorting.
 - iii. Descending order by sorting.
10. Write a program to convert uppercase string to lowercase (using "tolower" function and without using the functions).
11. Write a program that reads a string and prints this string in
 - i. UPPER CASE
 - ii. Sentence case
 - iii. Title Case
 - iv. tOGGLE cASE
12. Write a program that reads an array $mat []_{m \times n}$ of integer type and displays it in a matrix form.
13. Write a program that reads two matrices $A []_{m \times n}$ and $B []_{m \times n}$, add them as $C(i, j) = A(i, j) + B(i, j)$ and prints the result in matrix form.
14. Write a program that reads two matrices $A []_{m \times n}$ and $B []_{m \times n}$ and compare them for equality.
15. Write a program that reads two matrices $A []_{m \times r}$ and $B []_{r \times n}$ and prints the result of the product of two matrices such that
$$C []_{m \times n} = A []_{m \times r} * B []_{r \times n}.$$
16. Write a program which finds row sum and column sum of a matrix $A []_{m \times n}$ and prints the matrix along with row sum and column sum.
17. Write a program, which prints the transpose of a given matrix.
18. Write a program that will print out all the rotations of a word typed into it.
For example, the word "empty" entered should display as.
mptye ptyem tyemp yempt empty

19. Write a program declaring a two-dimensional array to enter the marks obtained by 10 students in different 5 subjects and calculate the total marks and percentage of each student. Declare division as
- If per ≥ 75 ----- > Distinction
 - If per ≥ 60 & < 75 ----- > First Division
 - If per ≥ 45 & < 60 ----- > Second Division
 - If per ≥ 32 & < 45 ----- > Third Division
20. Write a program that accepts two numbers and then display the result of addition, subtraction, multiplication and division of these two numbers on the screen. [Use cast – operator as required]
21. Write a program to calculate the area of circle using a function where radius of circle is input and define ‘ π ’ as constant.
22. Write a program to multiply two numbers using a function.
23. Write a program which prints the sequence of square of first 10 natural number (using programmer-defined function).
24. Write a program that accepts two numbers as base and exponent. Then calculate the base raised to power exponent. [Calculate a^b using user-defined function where a & b are inputs]
25. Write a program to print a menu using function. The output menu should contain main menu.
1. Add
 2. Subtract
 3. Multiply
 4. Exit
- It uses function add, subtract and multiply for addition, subtraction and multiplication and performs the tasks as your choice in the menu. For example if you choice 1, then the program should give the addition of two number entered and so on.
26. Write a program in which you have to enter Fname, Lname and phone_number of 5 different students and display all those information. Phone number should be in between 20000 and 799999. [Use two-dimensional array or Structure]
27. Write a program that asks the user to enter the name of student and marks obtained in computer and mathematic. Calculate the total marks obtained and percentage. Display all these information. [Use two-dimensional array or Structure]
28. Write a program that reads the name, roll number and marks in 5 different subjects of 10 students, and prints name, roll and the total marks obtained by each student. [Use two-dimensional array or Structure]
29. Write a program that reads several different names and addresses into the computer, rearrange the names into alphabetical order. Make use of structure variables.

30. A higher secondary school has asked you to write a HLL program to help them analyse their class test scores. The program must first ask for the number of students 'n' and should have a looping structure that loops through 'n' times to accept, validate and store the data in an array. The structure for each student is given below:

Field Name	Field Type	Size	Validation Rules
Roll	Numeric	2	1-99
Name	Alphabetic	25	
Marks	Numeric	2.1	0.0-10.0

The program must:

- Print out the data for students who have failed (obtained marks < 4.0)
- Print out the data for students scoring more than 7.9
- Print out the average class mark

31. A higher secondary school at Kathmandu is in the process of computerizing its examination system. The following is the data structure for students mark processing.

Field Name	Field Type	Size	Validation Rules
Regno	Numeric	6	030099-060099
Name	Alphabetic	20	
Year	Numeric	2	98-99
Subject1	Numeric	3	0-100
Subject2	Numeric	3	0-100
Subject3	Numeric	3	0-100
Subject4	Numeric	3	0-100
Subject5	Numeric	3	0-100

Develop a computer program in any of the high level languages you are taught in your class. The program should produce the following outputs using menu system.

List all students with subject wise marks, total mark percentage & result.

Conditional Rules:

- Student must secure marks $>$ or $=$ 40 in order to pass each subject, failure subject should be marked with * adjacent to the mark.
- Student securing $>$ or $=$ 50 and $<$ 65 percent marks in aggregate but without failing in any subject should be declared in II division under result column.
- Students securing $>$ or $=$ 65 percent marks in aggregate should be declared in first division
- Student securing $>$ or $=$ 40 and $<$ 50 percent mark should be declared as III division.

32. Write a program using C language to read the age of 100 persons and count the number of persons in the age group between 50 and 60. Use “for” and “continue” statements.

33. The rate of interest offered by a bank on fixed deposit:

- i. Period < 6 month 5%
- ii. Period 6 to 12 month 6%
- iii. Above 1 year 10%

Write a program using C language to calculate monthly interest of customer.

34. Write a program to display the multiplication table of a series of given numbers (entered by the user).

35. An organization has 5 stores and it deals in items. The stock position of these items is shown below.

	Item 1	Item 2	Item 3	Item 4
Store 1	30	35	0	40
Store 2	20	0	25	0
Store 3	80	175	25	35
Store 4	0	21	32	28
Store 5	10	80	15	40

Develop a computer program in any of the high level language you are taught in you class, to input this table and to indicate the items that are completely out of stock at store i, where the value of i may be input from the keyboard.

Your program should also calculate the total stock of each item in the organization and also the stock in store number 5.