

2026

COMPUTER SCIENCE — MINOR

Paper : MN-2

(Problem Solving using C)

Full Marks : 75

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

1. Answer **any five** questions : 2×5
- (a) What is the basic difference between interpreter and assembler?
 - (b) What is the purpose of a flowchart?
 - (c) Differentiate between variable and constant.
 - (d) How is break statement used in a menu driven program?
 - (e) How is 'continue' different from 'break' in terms of their usage?
 - (f) Draw and name the different symbolic structures used in a flowchart.
 - (g) Differentiate between '=' and '=='.
 - (h) What is a header file?

Section - A

Answer **any three** questions.

2. Write a program in C to take an integer as input and print the even digits present in the number, else print appropriate message if such digit is not found in the number. 5
- (Hint : Input – 689; Output – 68
Input – 731; Output – “No even digit”)
3. What do you understand by algorithms? Discuss the properties of a good algorithm. 2+3
4. Write a C function, quadratic(), that finds roots of a quadratic equation, $\left[x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \right]$, where 5
- a, b and c are accepted as arguments.*

Please Turn Over

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5. What are logical operators? Show usage of the logical operators in C using appropriate examples. 2+3
6. Define the concept of type casting with example. 5

Section - B

Answer *any five* questions.

7. (a) Differentiate between while and do-while structures.
 (b) Write an algorithm for searching an element using binary search technique. Is there any prerequisite for performing this search technique? If yes then what? 3+(5+1+1)
8. (a) Explain the scope and lifetime of variables with example.
 (b) Differentiate between an array of pointers and a pointer to an array with example. 4+(3+3)
9. (a) Explain call by value and call by reference with examples.
 (b) Explain operator precedence and associativity with examples. 5+5
10. Write a C program that performs the following operations on an array :
 (a) accept 10 integers,
 (b) display only the even numbers,
 (c) determine the largest element and smallest element
 (d) calculate the average of all elements. 1+2+5+2
11. (a) Explain recursion. Discuss its advantages and limitations.
 (b) Write a recursive C function to calculate the factorial of a positive integer. 4+6
12. (a) What are preprocessor directives? Give example.
 (b) What are strings in C? How are strings stored in memory?
 (c) Explain any three string handling functions (strlen, strcpy, strcmp) with syntax and example. (2+1)+(2+2)+3
13. (a) What is dynamic memory allocation? Discuss its advantages over static memory allocation.
 (b) Explain the use of malloc(), calloc(), realloc() and free() with suitable examples. 4+6
14. (a) Write a menu-driven program to find the area of square, rectangle, circle. Take necessary input to perform the calculation. Give comment lines.
 (b) Differentiate between static variable and global variable. Give example. 6+4