Saraswat Education Society's
SRIDORA CACULO COLLEGE OF COMMERCE AND MANAGEMENT STUDIES,
KHORLIM, MAPUSA-GOA
B.C.A (Semester I)
Examination October 2026
MAJOR COURSE
CSA-100 PROBLEM SOLVING AND PROGRAMMING

Duration: 2 hrs **Max. Marks:** 60

Instructions: 1) All questions are compulsory
2) Figures to the right indicate full marks
3) Write the question number correctly.

Q.1) Answer the following: **(6x2=12)**

i) Name the two approaches of modular programming.
ii) List **ANY FOUR** attributes of an algorithm.
iii) State the guidelines for creating documentation.
iv) List down the parts of a decision table.
v) State the use of a continue statement.
vi) List **ANY FOUR** string functions.

Q2.A) i) Explain in brief a hierarchy chart. Also state **ONE** example. **(03)**
ii) Explain the numeric datatypes in C programming. **(02)**

OR

Q2.A) iii) Explain the concept of structured programming. **(03)**
iv) Explain the variable naming rules. **(02)**

Q2.B) i) Describe the various symbols used in designing a flowchart. **(05)**
ii) Explain in brief the pseudocode constructs. **(02)**

Q3.A) i) Draw the flowchart for finding the difference of two numbers entered by the user. **(03)**
ii) Debug the following C Code: **(02)**

```
#include<stdio.h>
int main()
{
    float x = 3.1, y = 2.5;
    if(x = y)
     printf("x and y are equal");
}
```

OR

Q3.A) iii) Write an algorithm to find the perimeter of a rectangle. **(03)**

iv) Write the output of the following C Code: **(02)**

```
#include<stdio.h>
int main()
{
    int a = 3, b = 20;
    if(a == 5 || b > 50)
      printf("Hello")
   else
      printf("World\n");
   return 0;
}
```

Q3.B) i) Explain call by value and call by reference with an examples. **(05)**
ii) Explain a do-while loop using a pseudocode. **(02)**

Q4.A) i) Demonstrate the working of a recursive function. **(03)**
ii) Illustrate accessing of array elements with an example. **(02)**

OR

Q4.A) iii) Compare counting and accumulating with examples. **(03)**
iv) Design an array to store roll numbers of five students. Show how declaration and initialization can be combined and written separately. **(02)**

Q4.B) i) Compare negative logic with positive logic. **(05)**
ii) Explain multiline comment using an example. **(02)**

Q5.A) i) Demonstrate local and global variables with an example. **(03)**
ii) Discuss **ANY THREE** types of software documents. **(03)**

OR

Q5.A) iii) Illustrate the **ANY THREE** relational operators with an examples. **(03)**
iv) Demonstrate break statement in C. **(03)**

Q5.B) i) Evaluate the following expressions using the BODMAS rule: **(03)**
a) 8 / 2 + 10 * 4 / 2
b) 6 % 3 + (8 - 4) / 2
c) 7 – 8 + 6 * 2 / 4
ii) Demonstrate how an automatic-counter loop works with the help of an example. **(03)**

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