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Saraswat Vidyalaya's
Sridora Caculo College of Commerce & Management Studies
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CAC-101 PROBLEM SOLVING AND PROGRAMMING CONCEPTS

Duration: 2 Hours

Total Marks: 60

Total No. of pages: 3

Instructions: 1) *All questions are compulsory*
2) *Figures to the **right** indicate **full** marks*
3) *Use of **Calculator** is **prohibited***

Q.1.A) State whether following statements are True or False.
If False, Justify.

(5X1=05)

- I. Variable is a name given to store any data.
- II. Division by zero, is an example of Syntax Error.
- III. A well-documented system is easy to modify and maintain.
- IV. When we need to choose one among number of alternatives, a Switch Case Statement is used.
- V. Variable name cannot start with a number.

Q.1.B) Write the output for following:-

(5X1=05)

I.
`#include <stdio.h>`
`void main()`
`{`
`int x = 0;`
`if (x == 0)`
`printf("hi");`
`else`
`printf("how are u");`
`printf("hello");`
`}`

II.

```
int main()
{
    if( 10 > 20 )
        printf("Singapore\n");
    else if(4%2 == 0)
        printf("England\n");
        printf("Poland");
    return 0;
}
```

III.

```
#include<stdio.h>
void main()
{
    int x=4,y,z;
    y=--x;
    z=x--;
    printf("%d\t%d\t%d",x,y,z);
}
```

IV.

```
#include<stdio.h>
void main()
{
    static int a = 3;
    printf("%d", a --);
}
```

V.

```
void main()
{
    int a[3] = {10,12,14};
    a[1]=20;
    int i=0;
    while(i<3)
    {
        printf("%d ", a[i]);
        i++;
    } }
```


Q.2.A) Define Software. (02)

B) Write a short note on Bit Interpretation. (03)

C) Write an algorithm to accept marks of a student in 3 subjects. Calculate and display their total & percentage. Also check and display whether student is passing or failing. (Assume each subject marks are out of 100 and passing percentage is 40). (05)

Q.3.A) What is Program Debugging? (02)

B) Briefly describe Structured Programming (03)

C) Draw a flowchart to print numbers from 10-1 using while loop. (05)

Q.4.A) Define Instruction. List out its two components. (02)

B) Explain the use of Logical operators in IF Statement. Give an example. (03)

C) Explain the working of While & Do While Loop. Also state the difference between the two loops. (05)

Q.5.A) What do you mean by Keywords? Give two examples. (02)

B) How does the practice of good commenting increases the overall productivity of the team? (03)

C) Explain Recursive Function with an example. (05)

Q.6.A) Evaluate the expression:- $x = 9 - 12/3 + 3 * 2 - 1$ (assume x as int) (02)

B) What are Library Functions? Give two examples. (03)

C) With an example, explain different ways of accepting & displaying a String. (05)