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Saraswat Vidyalaya's
Sridora Caculo College of Commerce & Management Studies
B.C.A. Semester I End Examination, November, 2022

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++;
    }
}
```

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- 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)