

Saraswat Vidyalaya's
Sridora Caculo College of Commerce & Management Studies
First Year B.C.A. Semester-I Supplementary Examination, October 2020

PROBLEM SOLVING & PROGRAMMING CONCEPTS

Duration: 2 Hours

Total Marks: 30

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

Q.I) Answer the following questions: - (Any 5)

(5X2=10)

- a) State 2 disadvantages of Machine Level Language.
- b) Define verification & validation w.r.t program testing.
- c) Evaluate the following expression:- $10 + 4 * 3 / 2 - 6$
- d) Give example of syntax error & runtime error.(1 of each).
- e) Why documentation is needed for a program?
- f) Identify which are invalid variable names. Also state the reason.
 - a. marks-eng
 - b. salary_
 - c. percent10
 - d. 01_number
- g) Write the output of following:-

```
void main()
{
    int n;
    int a[5]={20,10,30,90,80};
    float x=75.3;
    printf("%d",a[4]);
    n=sizeof(x);
    printf("%d",n);
}
```

h) Write the output of following:-

```
include <stdio.h>
void main()
{
    int number,i=1;
    while (i<=3)
    {
        printf("Enter an integer: ");
        scanf("%d", &number);
        if (number < 0)
        {
            printf("You entered %d.\n", number);
        }
        i++;
    }
    printf("The if statement is easy.");
}
```

Q.II) Answer the following questions: - (Any 4)

(4X5=20)

a) Identify the following:-

a. Type of instructions:

i. Write hello 5 times

ii. $per = (total/300) * 100$

b. Type of data:

i. "7089"

ii. 9

iii. 58.7

- b) Write an algorithm & draw a flowchart to accept marks of a student in 3 subjects, calculate & display total & percentage. Also check whether student is passing or failing.(assuming 40 as passing percentage)
- c) Explain any 5 string functions with the help of examples.
- d) List out 5 modes of opening a file. Explain them.
- e) With the help of example demonstrate the working of recursive functions.
- f) Illustrate the use of break & continue statement.