VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY (VSSUT), ODISHA
Odd Mid Semester Examination for Academic Session 2024-25
SEMESTER: 1st

COURSE NAME: B.Tech.

BRANCH NAME: Section – D,E,F,G,H,I & J

SUBJECT NAME: C and Data Structure (CDS)

TIME: 90 Minutes

FULL MARKS: 30

Answer All Questions.

The figures in the right-hand margin indicate Marks. *Symbols carry usual meaning.*

[2 × 3]

Q1. Answer all Questions.

- CO1
- CO2
- CO3

a) Explain the function of #define with a suitable example.

b) What is the output of the following program? Justify your answer.

```c
#include <stdio.h>
int main()
{
  int i = 1;
  do
  {
    printf("%d\n", i);
    i++;
    if (i < 15)
      break;
  }while(1);

  getchar();
  return 0;
}
```

c) What will be the output if the following C program execute? Justify your answer.

```c
#include <stdio.h>

int main()

{

    int x;

    x = 5 < 8? 1! = 2 < 5 == 0? 10
: 20 : 30;

    printf("Value of x:%d", x);

    return 0;

}
```

[4+4]

Q2.

- CO1

a) What a Flowchart represents? Draw a flowchart and write an algorithm to check whether the number is even or odd.

b) Write a C program to find the sum of the digits of a number with proper output.

OR

- CO1

c) Explain the Structure of a C program with suitable example.

d) Discuss the following operators with suitable examples i) Prefix Increment Operator ii) Postfix Decrement Operator iii) Conditional Operator iv) Bitwise OR Operator

[4+4]

Q3.

- CO2

a) Write a program to find sum and average of 1D array elements with suitable example of your own.

b) Differentiate between entry controlled and exit controlled loops with suitable examples.

OR

c) Write a program to read a 3x3 matrix and find the sum of the left diagonal elements with suitable output.

- CO2

d) What do you mean by a recursive function? Explain with a suitable example program.