

VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY (VSSUT), ODISHA**Odd Mid Semester Examination for Academic Session 2025-26**

COURSE NAME: B. Tech.

SEMESTER: 1st

BRANCH NAME: M, N, O, P, Q, R, S & T

SUBJECT NAME: C and DS

FULL MARKS: 30

TIME: 90 Minutes

Answer All Questions.

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

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Q1.	Answer all Questions.		[2 × 3]								
	a)	Define and differentiate between interpreter and a compiler?	- CO1								
	b)	What is the output of the following programme, justify your answer? #include <stdio.h> int main() { int i = 5; for(;i<20;i+=2) { printf("%d\n", i); if (i > 13) break; } return 0; }	- CO2								
	c)	Differentiate between while and do-while with suitable example?	- CO1/ CO2								
Q2.	Draw and discuss a flowchart representing the steps involved in the process of compilation and execution of a C program.		[4+4]								
	Differentiate between continue and break statement. Write a C program to calculate the grade of a student by considering the following range of marks. <table><tr><td>O,</td><td>90<=marks<=100</td></tr><tr><td>Grades = A+,</td><td>80<=marks<90</td></tr><tr><td>A,</td><td>70<=marks<80</td></tr><tr><td>B,</td><td>60<=marks<70</td></tr></table>		O,	90<=marks<=100	Grades = A+,	80<=marks<90	A,	70<=marks<80	B,	60<=marks<70	- CO1
O,	90<=marks<=100										
Grades = A+,	80<=marks<90										
A,	70<=marks<80										
B,	60<=marks<70										
	OR										
	Write an algorithm and draw flowchart for finding largest among three numbers?		- CO1								
	Write program in C that will accept an integer. Then find the reverse of the integer? Then check the integer is palindrome or not and print it.										
Q3.	Write a short note on basic data types that the C language supports?		[4+4]								
	Write a program in C to print the following pattern. 1 1 2 1 2 3 1 2 3 4 1 2 3 4 5		- CO2								
	OR										

		Define a user defined function called Sum() with required number of arguments and mention its return type. Now in function main(), call the function Sum() to calculate sum of last two digits of an integer number taken from the keyboard which has at least 2 digit.	CO2
		What are the different types of operators in C? Explain any four operators (arithmetic, relational, logical, conditional, bitwise) with suitable examples.	
Q4.		Write a program using array to accept 20 integers. Calculate the sum of the inputted number and display it along with the largest and smallest number.	[4+4]
		What do you mean by function? What is function prototype? Write a program using C to find GCD among 2 inputted number using function.	- CO1/ CO2
		OR	
		What is a recursive function? Write a recursive function to find out the factorial of user inputted number.	- CO1/ CO2
		A worker takes a job for 31 days. His pay for the first day is Rs. 20. His pay for the second day is Rs. 40. Pay for each day is twice what he gets the previous day. Write a program in C to display the total pay for 10 days?	