STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI – 600 086
(For candidates admitted from the academic year 2023 – 2024 & thereafter)

B.C.A DEGREE EXAMINATION, NOVEMBER 2024
FIRST SEMESTER

COURSE   **:** **MAJOR CORE**
PAPER   **:** **FUNDAMENTALS OF COMPUTING**
SUBJECT CODE **:** **23CS/MC/FC13**
TIME   **:** **1 ½ HOURS**   **MAX. MARKS: 50**

Q. No.	SECTION A (10 X 1 =10)	CO	KL
	Answer all the questions:		
1	_____ control structure is used for multi-way branching. a) if b) while c) switch d) goto	CO1	K1
2	_____ loop will always execute at least once. a) for loop b) while loop c) do-while loop d) None of the above	CO1	K1
3	_____ operator has the highest precedence in C. a) + b) * c) ++ d) ==	CO1	K1

4	What will be the output of the following code?
	    int a = 5;
	    printf("%d", a++ + ++a**);**
	a) 11 b) 12 c) 10 d) Undefined behavior
		CO2	K2

5	To concatenate two strings in C, we use the function _____. a) strcat() b) strcpy() c) strlen() d) strrev()	CO2	K2
6	In C, variables declared inside a function are known as _____ variables.	CO1	K1
7	Arrays in C programming store a collection of elements of the same _____.	CO1	K1
8	The _____ function in C is used to allocate memory dynamically.	CO1	K1
9	A function that calls itself is known as a _____.	CO2	K2
10	_____ operator is used to access members of a structure in C.	CO2	K2
Q. No.	SECTION B	CO	KL
	Answer all the questions: (5 X 2 =10)		
11	What is the role of a compiler in C programming?	CO1	K1
12	What does a sizeof operator return in C?	CO1	K1
13	Define two-dimensional array in C.	CO2	K2
14	Differentiate function prototype and function definition in C.	CO2	K2

15	What is the significance of the fopen() function in file handling in C?	CO2	K2
Q. No.	**SECTION C** **Answer all the questions:** (6 X 5 = 30)	**CO**	**KL**
16	a) What is the basic structure of a C program? Describe its main components. **(OR)** b) Describe about data types in C.	CO1	K1
17	a) What is a switch-case statement in C, and how does it differ from using multiple if statements? Provide an example. **(OR)** b) What is a flowchart? What symbols are commonly used in them? Explain the significance of the symbols.	CO2	K2
18	a) Write a C program that calculates the sum of elements in a two-dimensional array. **(OR)** b) Write a C program that demonstrates the use of increment (++) and decrement (--) operators, and discuss their difference when used as prefix and postfix operators.	CO3	K3
19	a) Construct a C program that demonstrates the use of break and continue statements within a while loop. **(OR)** b) Construct a C program that uses a for loop to print all even numbers between 1 and 20.	CO3	K3
20	a) Differentiate between the step, next, and finish commands in GDB. How are they used in debugging? **(OR)** b) Analyze the concept of variable scope and its rules in C with examples.	CO4	K4
21	a) Explain the concept of recursion in C with an example of calculating the factorial of a number. **(OR)** b) Explain the use of the GDB command backtrace and how it helps in debugging a C program.	CO4	K4

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