

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2026
(First Semester)

Common to Branches – **COMPUTER SCIENCE/INFORMATION TECHNOLOGY/
COMPUTER TECHNOLOGY/COMPUTER NETWORKING & MOBILE
APPLICATION/COMPUTER SCIENCE WITH DATA ANALYTICS**

PROGRAMMING & PROBLEM SOLVING USING C

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

$$(10 \times 1 = 10)$$

Module No.	Question No.	Question	K Level	CO
1	1	Which of the following is NOT a characteristic of an algorithm? a) Finiteness b) Effectiveness c) Randomness d) Definiteness	K1	CO1
	2	Differentiate which of the following is a keyword and not an identifier? a) total b) float c) number1 d) Sum	K2	CO1
2	3	Identify the control statement that guarantees the loop body executes at least once. a) while b) do...while c) for d) continue	K1	CO2
	4	Visualize the memory for char s[] = "ABC";. How many cells are allocated? a) 2 b) 3 c) 4 d) 5	K2	CO2
3	5	List which of the following is not a valid way to process an array. a) Access elements using index b) Traverse using loop c) Directly assign one array to another d) Pass array name to a function	K1	CO3
	6	Compare pointers and arrays. Which statement is correct? a) Arrays and pointers are always identical b) Array name often acts like a pointer to the first element c) Pointers cannot access arrays d) Arrays can be resized like pointers	K2	CO3
4	7	Which storage class makes a variable retain its value across multiple function calls? a) auto b) static c) extern d) register	K1	CO4
	8	Review the following definitions. Which one is invalid? a) struct point { int x; int y; }; b) struct { int a; } obj; c) union data { int x; char y; }; d) struct student (int id; char name[20];);	K2	CO4
5	9	Select the correct function to write a string into a file. a) fscanf() b) fprintf() c) fputs() d) Both B and C	K1	CO5
	10	Review the following and identify the invalid preprocessor directive: a) #include <stdio.h> b) #define MAX 100 c) #undef MAX d) #macro ADD(x,y) (x+y)	K2	CO5

Cont...

SECTION - B (35 Marks)Answer **ALL** questions**ALL** questions carry **EQUAL** Marks

(5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Draw a neat flowchart to represent the logic of finding the largest of three numbers.	K3	CO1
		(OR)		
	11.b.	List the different data types in C with example.		
2	12.a.	Discuss the use of the break statement with an example inside a loop.	K2	CO2
		(OR)		
	12.b.	Describe different ways of declaring and initializing strings in C with examples.		
3	13.a.	Define an array in C and initializing a one-dimensional array with examples.	K4	CO3
		(OR)		
	13.b.	Write a program to swap two numbers using pointers and functions.		
4	14.a.	List out the difference between call by value and call by reference in C.	K3	CO4
		(OR)		
	14.b.	What is a union in C? Explain with syntax and an example.		
5	15.a.	Explain the use of fseek() and ftell() functions in file handling.	K1	CO5
		(OR)		
	15.b.	Write a program that accepts two numbers through command line arguments and displays their sum.		

SECTION - C (30 Marks)Answer **ANY THREE** questions**ALL** questions carry **EQUAL** Marks

(3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Discuss the importance of operators in C programming with examples.	K2	CO1
2	17	Define control statements and explain their importance in program flow.	K3	CO2
3	18	Explain how to pass an array to a function in C with an example program.	K4	CO3
4	19	Explain how to use pointers with structures and Write a program to access structure members using pointer notation.	K3	CO4
5	20	What are preprocessor directives in C? Explain with examples.	K1	CO5