

**PSG COLLEGE OF ARTS & SCIENCE**  
(AUTONOMOUS)

**MSc(SS) DEGREE EXAMINATION DECEMBER 2025**  
(First Semester)

Branch – SOFTWARE SYSTEMS (five years Integrated)

**PROBLEM SOLVING AND C PROGRAMMING**

Time: Three Hours

Maximum: 75 Marks

**SECTION-A (10 Marks)**

Answer **ALL** questions

ALL questions carry **EQUAL** marks (10 × 1 = 10)

Question No.	Question	K Level	CO
1	The first step in problem solving is a) Debugging b) Problem definition c) Coding d) flowcharting	K1	CO1
2	Which of the following is the file extension for C program? a) .cpp b) .java c) .c d) .py	K2	CO2
3	Which keyword is used to exit a loop immediately? a) continue b) exit c) break d) stop	K1	CO2
4	Which statement is used to jump to a labeled statement in C? a) exit b) goto c) break d) return	K2	CO2
5	The keyword used to return a value from a function is: a) break b) stop c) return d) end	K1	CO2
6	What is the index of the first element in a C array? a) 0 b) 1 c) -1 d) Depends on the compiler	K2	CO3
7	Which operator is used to access the value at the address stored in a pointer? a) & b) * c) -> d) .	K1	CO3
8	How do you access members of a structure using a variable? a) -> b) : c) . d) ,	K2	CO3

Cont...

9	Which function is used to open a file in C? a) fopen() b) fileopen() c) openfile() d) getfile()	K1	CO4
10	Which function is used to read a single character from a file? a) fgetc() b) getfile() c) readfile() d) fgets()	K2	CO5

**SECTION - B (35 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks  $(5 \times 7 = 35)$ 

Question No.	Question	K Level	CO
11.a.	List the basic steps involved in Problem Solving using Computer. (OR)	K1	CO1
11.b.	Design Algorithm and Flowchart with suitable example.		
12.a.	Explain the Looping Statement in C with suitable example. (OR)	K4	CO2
12.b.	Explain switch statement with syntax and example.		
13.a.	How does scope affect variables inside functions in C? (OR)	K4	CO2
13.b.	Differentiate between call by value and call by reference in C with example.		
14.a.	Evaluate the advantages and disadvantages of using pointers for dynamic memory allocation compared to using static memory in C. (OR)	K5	CO3
14.b.	Evaluate the advantages and limitations of using structures within union in C. Support your evaluation with a suitable code example.		
15.a.	Justify the importance of fseek() and ftell() functions in file handling by giving a practical scenario. (OR)	K5	CO4
15.b.	Interpret the significance of error-handling functions like perror() and perror() in file operation.		CO5

**SECTION - C (30 Marks)**

Answer ANY THREE questions

ALL questions carry EQUAL Marks

 $(3 \times 10 = 30)$ 

Question No.	Question	K Level	CO
16	Define operators in C. List the different categories of operators with example.	K1	CO2
17	Classify the different types of control statement in C with suitable example.	K3	CO2
18	Explain the declaration and initialization of one dimensional and two dimensional arrays with example.	K4	CO3
19	Compare and contrast structure and union in C with suitable example.	K4	CO3
20	Evaluate the advantages and disadvantages of using binary files over text files in C with suitable example.	K5	CO4