

Gayatri Vidya Parishad College of Engineering for Women
(Autonomous)

I. B.Tech - II Semester - End Examination

Problem Solving using C
(EEE Branch)

Date of Exam: 25/6/2025

Max Marks: 70

① (a) Outline and Explain ^(Unit - I) different data types with an example [7 M]
for each.

- Data Types in C ——— ② M
- Different data Types ——— ② M
- Each data type explanation — 1 M each.
= ③ M

7 M

② (b)

① Evaluate the following $a * b + c / d - e$ and describe the concept of arithmetic precedence and associativity [7 M]

Concepts of :-
• Arithmetic Precedence ——— ② M

• Associativity ——— ② M

• Evaluation of the expression —

(i) As per arithmetic precedence — ① M

(ii) Associativity — ① M

(iii) Result — ① M

7 M

[OR]

② ② With a suitable example explain the basic structure of a C program. [7M]

• structure of C program — } — (4M)
with explanation of each section

• Example / program to print the content — (3M)

7M

② ③ What do you mean by type conversion?
Explain different type conversions with an example for each. [7M]

• Type conversion — (1M)

• Implicit type conversion — (2M)

→ Example — (1M)

• Explicit type conversion — (2M)

→ Example — (1M)

7M

③ ④ List and explain decision making using different if statements. [7M]

• Control statement & its types } — (1M)

• Types of if statements } — (1M)

• Explanation of each if statements with syntax. — (2M) (2x3=6M)

2M

③ ⑥ Write a C program to copy one string to another with and without using string manipulation functions [7M]

- Explanation of string function — ① M
 - Program - 1 using string function — ③ M
 - Program - 2 without string function — ③ M
-
- 7M

[OR]

④ ⑥ Write a C program to find multiplication of two matrices using arrays [7M]

- Declaration of variables — ① M
 - Read the first matrix & second matrix elements — ② M
 - Condition for matrix multiplication — ① M
 - Initialization & display of matrices — ③ M
-
- 7M

④ ⑥ Compare and contrast while and do-while loop. Give example for each [7M]

- Looping — ① M
 - Syntax and example for while loop — ② M
 - Syntax and example for do-while loop — ② M
 - Difference between the loops — ② M
-
- 7M

Unit - III

5) (a) What are the advantages of a function? List and explain different parameter passing methods to a function. [7M]

- Definition — ① M
- Advantages of a function — ② M
- Parameter passing methods } — ② M each = (2 × 2 = 4M)
→ 2 types

7M

6) (b) Write a C program to find the sum of array elements using pointers [7M]

Program

- Declaration & initialize an array — ② M
- Declaration of a pointer — ① M
- Loop through the array using pointer — ② M
- Print the sum of array elements — ② M

7M

[OR]

6) (a) Define recursion. Write a C program to find Fibonacci series upto 10 terms using recursion [7M]

- Recursion definition — ② M
- Program : —
 - function definition — ② M
 - function call — ② M
 - output — ① M

7M

⑥ ⑥ With suitable example explain about dynamic memory allocation. [7 M]

- Concept of dynamic memory allocation — ② M
 - Syntax of DMA (malloc) (calloc) — ① M
 - Example of DMA (malloc) (calloc) — ④ M
-
-
- 7 M

Unit - IV

⑦ ⑥ With an example distinguish the concepts of structures and unions [7 M]

- Different between structures and unions. — ④ M
 - Example of structure — ② M
 - Example of Union — ① M
-
-
- 7 M

⑦ ⑥ What are nested structures? Explain with a program [7 M]

- Nested structures and types — ③ M (Any one type)
- Program using nested structure — ④ M

(OR)

⑧ ⑥ Apply the concept of structures and display the marks of the three students in three different subjects. [7 M]

Program:

- structure declaration — ② M
 - main program — ② M
 - Display of student information — ③ M
-
-
- 7 M

⑤ ⑥ What about typedef and enumerated type -
C program to find a particular day in a week using enumerated types [7M]

- Typedef & its explanation — (2) M
 - Enumeration type & its explanation — (2) M
 - C program using enum type — (3) M
-
- 7 M

Unit - V

⑨ ⑩ Construct a C program using Files to copy the contents of one file to another files [7M]

- Program — info — (1) M
 - Declaration of file pointer — (1) M
 - fopen in read mode & its statements } — (2) M
 - fopen in write mode & its statements } — (2) M
 - Copying file — (1) M
-
- 7 M

⑪ ⑫ Demonstrate random access to files with a suitable program using fseek(). [7M]

- Random Access files — (2) M
 - ↳ Different functions — (2) M
 - fseek() & its syntax — (2) M
 - Program using fseek — (1) M
-
- 7 M

10. (a) Differentiate Text and Binary files with a program [7M]

- Text files ~~of~~ operating modes — (2) M
 - Binary files operating modes — (2) M
 - Program with text file & binary file — (3) M
- 7 M

(b) Illustrate the working of the file functions with a program [7M]

- Basic steps for file handling — (4) M
 - Program with file functions — (3) M
- using fopen(), fprintf(), fclose(), fgets(), etc.
- 7 M

Prepared by



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