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**Question Paper Code : 85018**

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2025.

First Semester

Computer Science and Engineering

CS25C01 — COMPUTER PROGRAMMING C

(Common to : Biomedical Engineering/Computer Science and Engineering (Artificial Intelligence and Machine Learning)/Computer Science and Engineering (Cyber Security)/Computer Science and Engineering (Data Science)/Computer Science and Engineering (IoT)/Computer and Communication Engineering/Electrical and Computer Engineering/Electrical and Electronics Engineering/Electrical and Electronics Engineering (Training Integrated)/Electronics Engineering (VLSI Design and Technology)/Electronics and Communication Engineering/Electronics and Computer Engineering/Medical Electronics/Artificial Intelligence and Data Science/Computer Science and Business Systems/Information Technology)

(Regulations 2025)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Mention any two characteristics of a good algorithm.
2. Compare between entry controlled and exit controlled loop.
3. Differentiate between local and global variables.
4. Write the general syntax for a multi-dimensional array and its initialization.
5. How will you copy one string into another without using library functions?
6. Compare between static and dynamic memory.
7. What is union? How to define it?
8. Present the syntax of initializing a structure at the time of declaration.



9. State the purpose of using `rewind()` in file handling.
10. List two advantages of using user-defined header files.

PART B — (5 × 16 = 80 marks)

11. (a) Explain the basic structure of a C program in detail with an example. Describe documentation section. Link section, definition section, global declaration, `main()` function and subprograms.

Or

- (b) Describe bitwise operators in detail. Explain AND, OR, XOR, NOT, left shift and right shift operations with binary examples.
12. (a) Explain in detail the looping constructs : `for`, `while` and `do-while`. Compare them and write example programs.

Or

- (b) Discuss in detail about the selection statement in C : `if`, `if-else`, nested `if`, `switch`. Give suitable C programs.
13. (a) (i) Write a C program to find greatest common divisor using recursive function. (8)
- (ii) Discuss about the scope and lifetime of variables. (8)

Or

- (b) Illustrate in detail about call by value and call by reference with an example.
14. (a) (i) Compare and contrast structure and union with examples. (8)
- (ii) Explain about enum datatype in C with an example of days of a week. (8)

Or

- (b) Write a C program using pointers to structures to insert and update employee details using array of structure.
15. (a) Compare and contrast between text files and binary files. Write C programs for reading and writing in both formats.

Or

- (b) Explain the entire process of modular programming : splitting code, creating headers, linking and reuse with an example program.