

**Question Paper Code : 30115**

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2023.

Second Semester

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Computer Science and Engineering

CS 3251 – PROGRAMMING IN C

(Common to: Computer and Communication Engineering/Information Technology)

(Regulations 2021)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Draw the structure of C program.
2. What is the purpose of format specifier in I/O statements? Give an example.
3. Write down the syntax and give an example for array initialization.
4. How to identify the length of a string?
5. What is the function prototype? Give an example.
6. What are the difference between user defined functions and built-in functions?
7. What do you mean by self-referential structure?
8. What is unique about the storage class 'register'?
9. Describe the prototype of the function fopen().
10. List the various modes of accessing a file through C.

PART B — (5 × 16 = 80 marks)

11. (a) Explain the various data types being supported by C language. (16)

Or

- (b) Explain about the various looping statements available in 'C' with appropriate sample programs. (16)

12. (a) (i) What is an array? Explain about one dimensional array with a sample program. (8)
- (ii) Write about the significance of header file, 'string.h' and write short notes on any three string functions. (8)

Or

- (b) (i) Write and explain the procedure for selection sort. (8)
- (ii) Write a C program to demonstrate matrix addition. (8)

13. (a) Write short notes on the following:
- (i) function prototype and function call (8)
- (ii) function definition and return value (8)

Or

- (b) Enumerate the difference between call by value and call by reference with suitable examples. (16)

14. (a) (i) Explain the need for nested structures with appropriate example program. (8)
- (ii) Can a linked list grow dynamically? Justify your answer with example C program. (8)

Or

- (b) (i) With suitable diagram, explain the concept of singly linked list. (8)
- (ii) Enumerate the difference between structure and union with example. (8)

15. (a) How does random accessing of files are done in C language? Explain in detail. (16)

Or

- (b) What is the purpose of the variables argc and argv of command line arguments in C language? Explain with a sample program. (16)