

Programming Languages
(CSE-204-E, June-07)

Note: Attempt five questions in all, taking at least one question from each part.

PART-1

1. a) What do you understand by elementary data-types? Discuss the specification and implementation of integers and floating point real numbers.
2. a) What makes a good language? Explain in detail.
b) Differentiate static and dynamic type checking.
c) Write short notes on type conversion and coercion.

PART-2

3. a) Discuss the specification and implementation of structured types.
b) Give the accessing formula for computing the location of component A [I, J] of a matrix a declared as: A: Array [LB₁..UB₁, LB₂..UB₂], Where a stand in column-major order.
c) Differentiate array and record data structure.
4. Write short notes on following:
 - i) Information hiding
 - ii) Generic Subprograms
 - iii) Specification of a subprogram
 - iv) Implementation of sets

PART-3

5. a) Differentiate following:
 - i) Implicit and explicit sequence control
 - ii) Actual and formal parameters
b) Discuss the implementation of recursive subprograms.
6. What are the different methods for transmitting parameters? Explain with suitable example.

PART-4

7. a) Compare Fortran and Cobol language in terms of readability, workability and lack of ambiguity.
b) C allows the same thing to be expressed in many ways. All the following C statements add 1 to A.

A = A+1

A++

++A

A+ = 1

- Discuss the advantages and disadvantages of this aspect in the design of C.
- c) What is difference between C and C++ languages? Explain them with example.
 8. Write short notes on following:
 - i) Heap Storage Management.
 - ii) Static Storage Management.