

BT-4/J07

8634

Programming Languages

Paper : CSE-204-E

Option - (i)

Time : Three Hours]

[Maximum Marks : 100

Note :- Students are required to attempt FIVE questions in all by selecting at least ONE question from each unit.

## UNIT-I

1. What do you understand by elementary data-types ? Discuss the specification and implementation of integers and floating point real numbers. 20
2. (a) What makes a good language ? Explain in detail. 8
- (b) Differentiate static and dynamic type checking. 6
- (c) Write short notes on type conversion and coercion. 6

## UNIT-II

3. (a) Discuss the specification and implementation of structured types. 10
- (b) Give the accessing formula for computing the location of component A [I, J] of a matrix a declared as :  
 $A : \text{Array } [LB_1..UB_1, LB_2..UB_2]$   
where a stand in column-major order. 5
- (c) Differentiate array and record data structure. 5
4. Write short notes on following :
  - (i) Information Hiding
  - (ii) Generic Subprograms
  - (iii) Specification of a subprogram
  - (iv) Implementation of sets. 5×4=20



### UNIT-III

5. (a) Differentiate following :
- (i) Implicit and explicit sequence control
  - (ii) Actual and formal Parameters. 5×2=10
- (b) Discuss the implementation of recursive subprograms. 10
6. What are the different methods for transmitting parameters ? Explain with suitable example. 20

### UNIT-IV

7. (a) Compare Fortran and Cobol language in terms of readability, workability and lack of ambiguity. 6
- (b) C allows the same thing to be expressed in many ways. All the following C Statements add 1 to A.
- $A = A+1$
- $A++$
- $++A$
- $A+ = 1.$  6
- 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
8. Write short notes on following :
- (i) Heap Storage Management
  - (ii) Static Storage Management. 10×2=20