

**CSE-204-F**

**PROGRAMMING LANGUAGES**

L T P  
3 1 0

Class Work Marks: 50  
Exam Marks: 100  
Total Marks: 150  
Duration of Exam: 3 Hrs.

**NOTE: For setting up the question paper, question no 1 will be set up from all the four sections which will be compulsory and of short answer type. Two questions will be set from each of the four sections. The students have to attempt first common question, which is compulsory, and one question from each of the four sections. Thus students will have to attempt 5 questions out of 9 questions.**

**Section A: Introduction:**

Syntactic and semantic rules of a Programming language, Characteristics of a good programming language, Programming language translators compiler & interpreters Elementary data types – data objects, variable & constants, data types, Specification implementation of elementary data types, Declarations ,type checking & type conversions ,Assignment & initialization, Numeric data types, enumerations, Booleans & characters.

**Section B: Structured data objects, Subprograms and Programmer Defined Data Type:**

Structured data objects & data types , specification & implementation of structured data types, Declaration & type checking of data structure ,vector & arrays, records Character strings, variable size data structures , Union, pointer & programmer defined data objects, sets, files. Evolution of data type concept, abstraction, encapsulation & information hiding, Subprograms, type definitions, abstract data types.

**Section C: Sequence Control and Data Control:**

Implicit & explicit sequence control, sequence control within expressions, sequence control within statement, Subprogram sequence control: simple call return, recursive subprograms, Exception & exception handlers, co routines, sequence control. Names & referencing environment, static & dynamic scope, block structure, Local data & local referencing environment, Shared data: dynamic & static scope. Parameter & parameter transmission schemes.

**Section D: Storage Management, Programming languages:**

Major run time elements requiring storage, programmer and system controlled storage management & phases, Static storage management, Stack based storage management, Heap storage management, variable & fixed size elements. Introduction to procedural, nonprocedural, structured, functional and object oriented programming language, Comparison of C & C++ programming languages.

**TEXT BOOK:**

Programming languages Design & implementation by T.W. .Pratt, 1996, Prentice Hall Pub.  
Programming Languages – Principles and Paradigms by Allen Tucker & Robert Noonan, 2002, TMH,

**REFERENCE BOOKS:**

Fundamentals of Programming languages by Ellis Horowitz, 1984, Galgotia publications (Springer Verlag),  
Programming languages concepts by C. Ghezzi, 1989, Wiley Publications,  
Programming Languages – Principles and Pradigms Allen Tucker, Robert Noonan 2002, T.M.H.