

# AMIT-08 PRINCIPLE OF PROGRAMMING LANGUAGE

## UNIT-1 PROGRAMMING DOMAINS.

- 1.1 Language Evaluation.
- 1.2 Programming paradigms
- 1.3 Imperative programming, Functional programming,
- 1.4 Object oriented programming, Logic programming.
- 1.5 Formal methods of describing syntax and semantics
- 1.6 Backus Naur Form, Attribute grammars.
- 1.7 Describing semantics
- 1.8 Denotational semantics.

## UNIT-2 DATA

- 2.1 Types, Names, Variables,
- 2.2 Bindings, Scope and lifetime,
- 2.3 Referencing Environments-Named Constants
- 2.4 Variable Initialization-Subprograms
- 2.5 Parameter Passing-Coroutines.

## UNIT-3 DATA ABSTRACTION AND ENCAPSULATION.

- 3.1 Polymorphism and inheritance.
- 3.2 Features of object-oriented languages
- 3.3 Smalltalk, C++ and Java.
- 3.4 Design and implementation issues.
- 3.5 Exception handling.

## UNIT-4 FUNCTIONAL PROGRAMMING LANGUAGES

- 4.1 Lambda calculus
- 4.2 Introduction to pure LISP.
- 4.3 Application of functional programming languages.
- 4.4 Logic programming languages,
- 4.5 A brief introduction to predicate calculus
- 4.6 Horn clauses, Logic programming.
- 4.7 Introduction to Prolog.
- 4.8 Applications of Logic programming.

## References Book:

1. Robert W. Sebesta, "Concepts of Programming Languages", 8th edition, Addison Wesley
2. Ravi Sethi, "Programming Languages-concepts and constructs", 2nd edition, Addison Wesley, ISBN: 81- 7758-422-7.
3. Michael L. Scott, "Programming Language Pragmatics – 3rd edition, Morgan Kaufmann
4. Kenneth.C.Louden, "Programming Languages: Principles and Practices", 2nd edition. Thomson Learning.