1129
B.E. (Computer Science and Engineering)
Fifth Semester
CS-504: Principles of Programming Languages

Time allowed: 3 Hours   Max. Marks: 50

NOTE: Attempt _five_ questions in all, including Question No. I which is compulsory and selecting two questions from each Unit. Assume missing data if any suitably.

x-x-x

I. Briefly explain the following:-

   a) Abstract Classes

   b) Garbage Collection

   c) Type Checking

   d) Binding

   e) Higher Order Functions   (5x2)

UNIT – I

II. Define Overloading? Contrast between context-independent and context-dependent overloading as well as between function overloading and operator overloading? How can we override a method in JAVA and C++? Explain.   (10)

III. a) Explain logic programming with respect to relation, rules, facts and queries.

    b) List and discuss synchronization primitives in concurrent programming.   (2x5)

IV. a) What are the different stages in language translation? Explain.

    b) Discuss in detail the different parameter passing mechanisms.   (2x5)

UNIT – II

V.   Differentiate between Static storage management and Heap based storage management.   (10)

VI. a) Describe different Polymorphic data types with the help of suitable examples. (5)

    b) What do you understand by "type inference" and "type checking" in functional programming?   (2x5)

VII. a) How are exceptions handled in Java? Explain.

    b) Define Procedural, Generic and Data abstraction in C++.

    c) List the features of PROLOG that classify it as a logic programming language?   (5,3,2)

x-x-x