R13

PRINCIPLES OF PROGRAMMING LANGUAGES
(Information Technology)

Time: 3 Hours   Max. Marks: 75

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit.
Each question carries 10 marks and may have a, b, c as sub questions.

PART- A   (25 Marks)

1.a) Define nonintrinsic synthesized attribute. [2M]
  b) What are the factors that influence the writability of a Language? [3M]
  c) What is a descriptor? [2M]
  d) Define narrowing and widening conversions. [3M]
  e) Define coroutine. [2M]
  f) What are formal parameters and actual Parameters? [3M]
  g) Define disjoint task [2M]
  h) What is a friend function? What is a friend class? [3M]
  i) What is type inferencing? [2M]
  j) What is lazy evaluation? [3M]

PART-B   (50 Marks)

2.a) Illustrate with examples static and demanic semantics.
  b) What are the three general methods of implementing a programming language? Explain.   [5+5]

OR

3.a) Describe the basic concept of denotational semantics.
  b) Give an overview of BNF notation.   [5+5]

4.a) What are the design issues for Arrays? Explain.
  b) Explain the name type compatibility and structure type compatibility. What are the relative merits of the two?
  c) What is mixed mode expression? How mixed mode assignments are allowed in Ada?   [3+4+3]

OR

5.a) Describe the Lazy and eager approaches to reclaiming garbage.
  b) Explain the relationship between type binding and implicit heap-dynamic variables.
  c) Describe three situations where a combined counting and logical looping construct is needed.   [3+3+4]

6.a) What are the design issues for subprograms? Explain briefly.
  b) Write a note on parametric polymorphism.   [5+5]

OR

7.a) Explain any three parameter passing methods with examples.
  b) What is the general problem with static scoping?   [5+5]

8.a) What are the language design issues for abstract data types?
  b) How is the type system of java different from that of C++?
  c) Describe the actions of wait and release operations for semaphores.   [3+3+4]
OR
9.a) Give an overview of Java threads.
  b) What are the three characteristic features of Object Oriented Languages? Explain briefly.
  c) What is the difference between a C++ throw specification and a java throws clause?   [3+3+4]

10.a) Give an overview of LISP.
   b) Give the applications of functional programming languages.   [5+5]
OR
11.a) Explain how procedural abstraction and data abstraction is possible in Python.
   b) Explain the features of ML.   [5+5]

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