Code No: 125AN

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech III Year I Semester Examinations, November/December - 2017
PRINCIPLES OF PROGRAMMING LANGUAGES
(Computer Science and Engineering)

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) List the principal phases of compilation.   [2]
  b) Explain the features of denotational semantics.   [3]
  c) Explain about guarded commands.   [2]
  d) Differentiate between user defined and primitive data types with an example.   [3]
  e) Explain about the local referencing environments.   [2]
  f) Explain the design issues for functions.   [3]
  g) Explain the parts of smalltalk class.   [2]
  h) Distinguish between Competitive Synchronization and Cooperation synchronization.
                                                                                                        [3]
  i) What is the type inferencing used in ML.   [2]
  j) What are the applications of functional programming languages.   [3]

PART - B

(50 Marks)

2.a) Distinguish between ambiguous grammer and attribute grammar with an example.
  b) Construct the parse tree for the simple statement.   [5+5]
$$A := B * (A + C)$$
OR
3.a) Explain about the preconditions and postconditions of a given statement mean in
       axiomatic semantics.
  b) Describe the important factors influencing the writability of a language.   [5+5]

4.a) Describe about the pointers in FORTRAN 90, Ada, pascal with an example.
  b) Write the syntax and semantic rule of an attribute grammer for simple assignment
       statements.   [5+5]
OR
5.a) Explain about the control structures with an example.
  b) Explain the different types of Union with an example.   [5+5]

6.   Explain the different parameter passing methods with an example.   [10]
OR
7.a) What is an overloaded subprogram explain with an example.
  b) What are the characteristics of co-routine feature? List the languages which allow
       coroutines.   [5+5]

8.a) What is semaphore. Explain the different types of semaphores.
  b) Explain the design issues of an exception handling system.   [5+5]

OR

9.a) Explain about the data abstraction for SIMULA 67.
  b) Explain how to handle the exceptions in C++.   [5+5]

10.a) Write a function that computes the sum of numbers using vectors in LISP.
  b) Explain the different types of data types used in Python.   [5+5]

OR

11.a) Explain how to handle exceptions in Java with an example.
  b) Explain about the fundamentals of functional programming languages. [5+5]

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