

Code No: 115AN**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B.Tech III Year I Semester Examinations, May/June - 2019****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) Explain about the Virtual Machine. [2]
- b) What are the uses of attribute grammar? [3]
- c) Explain about the problems in unconditional branching. [2]
- d) Explain about the enumerated data type. [3]
- e) What are the characteristics of subprograms? [2]
- f) Explain about coroutines. [3]
- g) Why does Java not have a destructors? [2]
- h) What are the applications of logic programming? [3]
- i) Describe the scoping rule in ML. [2]
- j) Explain about the fundamentals of FPL. [3]

PART - B**(50 Marks)**

- 2.a) Explain about the preconditions and postconditions of a given statement mean in axiomatic semantics.
- b) Describe the steps involved in the language evaluation criteria. [5+5]

OR

- 3.a) Explain the different categories of languages.
- b) Draw and explain the flow chart for compilation process. [5+5]

- 4.a) Explain about the mixed-mode assignments that are used in Ada and Java Languages.
- b) Explain about the type compatibility with an example. [5+5]

OR

- 5.a) What is type checking? Differentiate between static and dynamic type checking and give their relative advantages.
- b) Define an array? Explain how to initialize an array? Explain the different types of arrays. [5+5]

- 6.a) Describe about the static and dynamic scope of variables with an example.
b) Define sub program. What are the distinct categories of subprograms. [5+5]
- OR**
- 7.a) Explain about the generic subprograms in Ada with an example.
b) Explain about the semantic models of parameter passing. [5+5]
- 8.a) Explain about the concurrency in Ada 95.
b) Explain the basic elements of prolog. [5+5]
- OR**
- 9.a) Explain how to handle the exceptions in Ada.
b) What are the design issues of abstract data types. [5+5]
- 10.a) Explain about the internal representation of two LISP lists.
b) Describe the scoping rule in common LISP and Haskell. [5+5]
- OR**
- 11.a) Compare the functional programming languages with imperative languages.
b) Write a LISP function Fib(n) that computes nth Fibonacci number. [5+5]

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