

Code No: 115AN**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year I Semester Examinations, November/December - 2018****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) Define axiomatic semantics. [2]
- b) Give an attribute grammar for simple assignment statements. [3]
- c) What do you mean by precision and range? [2]
- d) What is aliasing? What are the problems associated with it? [3]
- e) Differentiate between actual and formal parameters. [2]
- f) What are the three general characteristics of subprograms? [3]
- g) Define abstract data type. [2]
- h) What is the purpose of a C++ destructor? [3]
- i) How Haskell is different from ML? [2]
- j) What is procedural abstraction? Give example. [3]

PART - B**(50 Marks)**

- 2.a) Discuss various programming domains and their associated languages. [6+4]
- b) Describe the basic concept of denotational semantics. [6+4]

OR

- 3.a) What are the potential benefits of studying programming language concepts? [5+5]
- b) Explain with examples how syntactic design choices affect readability. [5+5]

- 4.a) What do you mean by binding? Give examples of some of the bindings and their binding times. [6+4]
- b) Evaluate the two approaches for supporting dynamic allocation and deallocation for dynamic length strings. [6+4]

OR

- 5.a) Explain in detail various design issues of character string types. [4+6]
- b) What are dangling pointers and lost heap-dynamic variables? How are they created? [4+6]

- 6.a) How co-routines are different from conventional subprograms? [5+5]
- b) Explain type checking technique in parameter passing. [5+5]

OR

- 7.a) What is a subprogram? Discuss the design issues of subprograms. [5+5]
- b) Write a detailed note on local referencing environments. [5+5]

- 8.a) What are the various methods of exception handling? Discuss.
b) How message passing is implemented in ADA? Give examples. [5+5]

OR

- 9.a) Explain how information hiding is provided in an ADA package.
b) Discuss about the basic elements of Prolog with examples. [5+5]

- 10.a) Explain the important functions of LISP.
b) Discuss the key concepts of scripting languages. [5+5]

OR

- 11.a) What are the three features of Haskell that makes very different from schema?
b) What are the data types supported in Python? Discuss. [5+5]