

Code No: 115AN**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year I Semester Examinations, November - 2015****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 syntax and semantics. [2]
- b) Define derivation and a parse tree. [3]
- c) What is the problem with case sensitive names? [2]
- d) What is a variable? What are the attributes of a variable? [3]
- e) What is a Co-routine? Explain. [2]
- f) Explain the scope and life time of a variable. [3]
- g) What is message passing? Explain. [2]
- h) What advantages do monitors have over semaphores? [3]
- i) What are the data types supported in Python? [2]
- j) Differentiate between procedural and data abstraction. [3]

PART - B (50 Marks)

- 2.a) In what fundamental way do operational semantics and denotational semantics differ?
- b) Explain with an example how operator associativity can be incorporated in grammars. [5+5]

OR

- 3.a) What are the three general methods of implementing a programming language?
- b) The levels of acceptance of any language depend on the language description. Comment on this. [5+5]

- 4.a) Explain the differences between subtypes and derived types.
- b) What are the design issues for character string types? Discuss. [5+5]

OR

- 5.a) Describe the process of Array initialization.
- b) Explain the problems associated with Unconditional Branching. [5+5]

- 6.a) Explain the design issues that are involved in functions.
- b) What are the advantages and disadvantages of dynamic type binding? [5+5]

OR

- 7.a) Explain how subprogram names are passed as parameters. Illustrate with examples.
- b) Explain how subprogram is overloaded? Give examples. [5+5]

- 8.a) Explain in brief about Exception handling in Ada.
- b) Discuss Terms and Goal statements in Prolog. [5+5]

- 9.a) What is a semaphore? What are the operations on semaphores?
- b) Write short notes on C# threads. [5+5]

10.a) Explain the Basic primitives of LISP. Give suitable examples.

b) Discuss the applications of functional languages.

[5+5]

OR

11.a) Explain the differences between Imperative and functional languages.

b) Write a detail note on functions in ML.

[5+5]

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