R13

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]

OR

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.

OR

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

b) Write a detail note on functions in ML.

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