Code No: 115AN

R13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, November/December - 2016
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)	List out language categories.	[3]
c)	What is the purpose of assignment statement?	[2]
d)	What is a variable? What are the attributes of a variable?	[3]
e)	Differentiate between function and procedure.	[2]
f)	Write an example of call and return statements.	[3]
g)	What is the difference between a C++ class and an Ada package?	[2]
h)	Define Semaphore and monitor.	[3]
i)	Write the advantages of scripting languages.	[2]
j)	What are the applications of functional programming languages?	[3]

PART - B

(50 Marks)

2.a) How can user-defined operator overloading harm the readability of a program? Explain.
b) Define grammars, derivation and a parse tree.
[7+3]

OR

3.a) Discuss about language recognizers and language generators.
b) Describe the basic concept of axiomatic semantics.
[5+5]

4.a) Explain in detail counter-controlled loops.
b) What are various design choices for string length?
[5+5]

OR

5.a) What are the design issues for names?
b) Explain associative arrays, their structure and operations.
[3+7]

6.a) Explain the scope and lifetime of variables with examples.
b) What are the characteristics of co-routine feature? List the languages which allow co-routines.
[5+5]

OR

7.a) Explain how subprogram names are passed as parameters. Illustrate with examples.
b) Discuss user defined overloaded operators.
[5+5]

8.a) What is meant by logic programming? Explain different types of applications of logic programming.
  b) Discuss briefly exception handling in ADA.   [5+5]

OR

9.a) What is the difference between checked and unchecked exception in java?
  b) Briefly Explain the Sub-program level concurrency.   [4+6]

10.a) Compare functions in ML and Haskell.
  b) Write about the operations that can be performed on atoms and lists in LISP.   [4+6]

OR

11.a) Make a comparison between functional and imperative Languages.
  b) Write a short note on data and procedural abstraction.   [5+5]

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