R13

Code No: 115AN

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, March - 2017
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)	Give the relative advantages of object oriented programming paradigm.	[2]
b)	What are the fundamental features of imperative languages?	[3]
c)	Write the difference between a C++ pointer and a Java Reference variable.	[2]
d)	Mention the primary design issues specific to arrays.	[3]
e)	What are the two fundamental design considerations for parameter-passing methods?	[2]
f)	What is an overloaded subprogram? Give an example.	[3]
g)	Give the two kind of abstractions in programming languages.	[2]
h)	Describe the functionality of 'finally' clause of JAVA exception handling mechanism.	[3]
i)	What are the differences between CONS, LIST and APPEND?	[2]
j)	What are the features of Haskell?	[3]

PART - B

(50 Marks)

2.a) Explain the criteria of success for a good programming language.
b) Describe in your own words, the concept of orthogonality in programming language design. [5+5]

OR

3.a) Explain the syntax of 'case' statement in Pascal using BNF notation and syntax graphs.
b) Explain the practical problems associated with the if-then-else statement. [5+5]

4.a) What is an associative array? Discuss its structure and implementation with an example.
b) Give a detail note on guarded commands. [5+5]

OR

5.a) Explain mixed mode assignment statement with relevant example.
b) What are the design issues of logically controlled loop statements? Explain briefly. [5+5]

6.a) Give a detailed note on pass-by-name and pass-by-reference parameter passing methods.
b) Explain about generic sub-programs with examples. [5+5]

OR

7.a) Describe the shallow-access method of implementing dynamic scoping.
b) What is the need of an activation record in implementing a subprogram? Explain with an example. [5+5]

8.a) Explain the exception handling mechanism in C++ with illustrative example.
b) Write a note on Abstract Data Types in Ruby. [5+5]

OR

9.a) What is a semaphore? Explain its role in concurrency.
b) Write a brief note on C# threads. [5+5]

10.a) Compare Functional programming languages and Imperative Languages.
b) Describe the two common mathematical functional forms that are provided by scheme. [5+5]

OR

11. Explain various storage and control statements available in Python. [10]

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