Code No: 114DJ

R13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech. II Year II Semester Examinations, October/ November- 2016
PRINCIPLES OF PROGRAMMING LANGUAGES
(Information Technology)

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) Explain the concept of virtual machine. [2]
b) Is 'goto' a good programming language construct? How does it affect readability? [3]
c) What is a variable? What are the attributes of a variable? Explain. [2]
d) What is short circuit evaluation? What is the advantage of it? [3]
e) Explain about the life time of a variable. [2]
f) What are advantages and disadvantages of dynamic local variables? [3]
g) What is semaphore? Explain. [2]
h) Explain any three deficiencies of prolog with examples. [3]
i) What are the key concepts of scripting languages? [2]
j) How Meta Language differs from Haskell? Explain. [3]

PART-B

(50 Marks)

2.a) What are the factors influencing the writability of a language? How readability and writability contradict with each other? Give an example.
b) Define axiomatic semantics. Comment on its applicability. [5+5]

OR

3.a) Give advantages and disadvantages of pure compilation and pure interpretation.
b) What do you mean by static semantics? Give examples of static semantic rules that are difficult and impossible to describe with BNF. [5+5]

4.a) Write short notes on type error, type checking and strong typing.
b) Explain in detail about counter-controlled loops. [5+5]

OR

5.a) Explain in detail multiple selection constructs.
b) What are the advantages and disadvantages of allowing mixed-mode arithmetic expressions? [5+5]

6.a) Explain pass-by-value and pass-by-reference parameter passing techniques.
b) How subprogram is overloaded? Explain with examples. [5+5]

OR

7.a) Explain how subprogram names are passed as parameters?
b) What is a coroutine? Explain coroutine relationships between two procedures with an example. [5+5]

8.a) What are the language design requirements for a language that supports abstract data types? Discuss.
b) What are the basic elements of Prolog? Explain. [5+5]

OR

9.a) What are the differences between private and limited private types in Ada?
b) How cooperation synchronization is implemented using monitors? Explain. [5+5]

10.a) Explain various operations that can be performed on atoms and lists in LISP.
b) Write a detailed note on Python. [5+5]

OR

11.a) What are the differences between functional and imperative languages? Explain.
b) Describe briefly about expressions, functions and exceptions in Meta Language. [5+5]

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