

Code No: 124DJ

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.Tech II Year II Semester Examinations, April - 2018

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) Define and differentiate between Syntax and Semantics. [2]
- b) What are the three fundamental features of an object-oriented programming language? [3]
- c) What are the advantages and disadvantages of decimal data types? [2]
- d) Explain the design issues for arrays. [3]
- e) Differentiate between a function and a procedure. [2]
- f) What kind of machines often use registers to pass parameters? [3]
- g) Define abstract data type and give example. [2]
- h) What are the legal return types of a destructor? [3]
- i) What is the use of the evaluation environment table? [2]
- j) Explain the use of the assert statement with example. [3]

PART-B**(50 Marks)**

- 2.a) What are the rules of EBNF? Explain in detail.
 - b) Compare the BNF with EBNF and discuss their advantages and disadvantages. [5+5]
- OR**
- 3.a) How can knowledge of programming language characteristics benefit the whole computing community? Explain.
 - b) What the primary use of attribute grammars? Discuss. [5+5]
- 4.a) Describe ordinal, enumeration, and sub range types.
 - b) What are the design issues for unions? Explain. [5+5]
- OR**
- 5.a) What is binding? What are the various methods of binding? Explain.
 - b) Explain about the Pointers and References in brief. [5+5]
- 6.a) What are design issues of functions? Discuss.
 - b) With example, explain about co routines. [5+5]
- OR**
- 7.a) What is subprogram? Explain with an example.
 - b) What are the design issues of subprograms? Discuss. [5+5]

8.a) What is the fundamental difference between a C++ class and an Ada package?

b) What is a friend function? What is a friend class? Give examples. [5+5]

OR

9.a) What are the various methods of Exception handling? Explain.

b) Explain about semaphores with an example. [5+5]

10.a) What is tail recursion? Why is it important to define functions that use recursion to specify repetition to be tail recursive?

b) Write a brief note on Scripting languages. [5+5]

OR

11.a) Explain about procedural abstraction in Python.

b) Discuss about the features of Haskell that make it very different from Scheme. [5+5]

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