Code No: 125AN

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, May - 2018
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) In what way do operational semantics differ from denotational semantics? [2]
  b) A programming language can be compiled or interpreted. Give relative advantages and disadvantages of compilation and interpretation. [3]
  c) Define Union type. [2]
  d) How pointers are represented and used in C and C++? [3]
  e) What are the different categories of subprograms? [2]
  f) Give a brief note on Scope and lifetime of variable. [3]
  g) What is the purpose of the Java Finally clause? [2]
  h) Explain the applications of logic programming. [3]
  i) Write about functions in ML and Haskell. [2]
  j) Discuss the storage and Control in python. [3]

PART - B

(50 Marks)

2.a) What is need for study of programming languages? Explain.
  b) Describe the Programming Paradigms. [5+5]

OR

3.a) Define Ambiguity. Write short notes on attributed grammars.
  b) Explain briefly about the Denotational semantics with example. [5+5]

4. What is an array? Explain about various array operations with an example. [10]

OR

5.a) Explain the syntax of Ada Union Type.
  b) List and explain the design issues for all iterative control statements. [5+5]

6. Describe the Design issues of subprograms and operations. [10]

OR

7.a) Briefly explain the static and dynamic scope.
  b) What are the general subprogram characteristics? Explain. [5+5]

8. Explain how Binary semaphore provides solution to the competition synchronization problem with example pseudo code. [10]

OR

9. What is exception handling? Explain about exception handling in Java. [10]

10.a) What is the difference between functional and imperative languages?
   b) Discuss the data types supported in Python. [5+5]

OR

11. Explain the common characteristics of the scripting languages. [10]

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