

Code No: 137GA

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, January/February - 2023

PRINCIPLES OF PROGRAMMING LANGUAGES**(Computer Science and Engineering)****Time: 3 Hours****Max. Marks: 75****Note:** i) Question paper consists of Part A, Part B.

ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.

iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A**(25 Marks)**

- 1.a) Why language evaluation criteria need to be considered? [2]
- b) Compare Syntax and Semantic of a program. [3]
- c) Define binding and lifetime. [2]
- d) Differentiate Relational and Boolean Expressions. [3]
- e) Discuss parameter passing methods. [2]
- f) Briefly specify about overloaded operators. [3]
- g) What are the various issues of OOP? [2]
- h) Discuss concurrency in functional languages. [3]
- i) Explain scope and binding in python. [2]
- j) Compare procedural abstraction and data abstraction. [3]

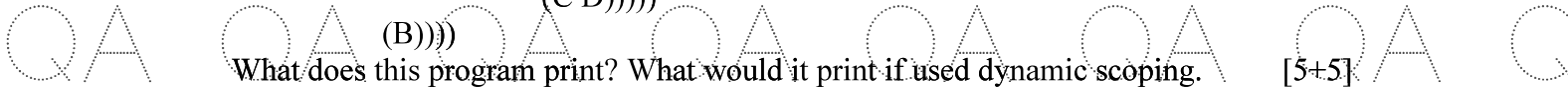
PART – B**(50 Marks)**

- 2.a) Discuss formal method for describing syntax using BNF.
 - b) What are various programming domain? Explain. [5+5]
- OR**
- 3.a) Give EBNF description for the 'C' Union.
 - b) How are imperative languages built? [5+5]
- 4.a) Compare static and dynamic type checking.
 - b) Give an overview of iterative statements. [5+5]
- OR**
- 5.a) Discuss the advantages and disadvantages of the interoperability of pointers and arrays in C.
 - b) Write a note on type equivalence. [5+5]



- 6.a) Discuss Encapsulation in detail.
- b) Consider the following program.

```
(define A
  (lambda ()
    (let* ((x2)
           (C (lambda (p)
                 (let ((x 4))
                   (p))))
           (D (lambda ()
                 (let ((x 3))
                   (C D))))))
      (B))))
```



What does this program print? What would it print if used dynamic scoping. [5+5]

OR

- 7.a) Explain general semantics of call and return statements. [5+5]
- b) Mention the advantages and disadvantages of Abstract data types. [5+5]

- 8.a) Highlight the design issues in C++ and Java. [5+5]
- b) What are the various features of RUBY programming language? [5+5]

OR

- 9.a) Discuss exceptional handling in ADA. [5+5]
- b) What is a monitor? How do monitor condition variables differ from those of semaphores? [5+5]

- 10.a) Explain the different type variables supported in PYTHON . [5+5]
- b) Distinguish Functional and Imperative programming language. [5+5]

OR

- 11.a) Discuss values and types in Python language. [5+5]
- b) Explain different mathematical functions supported in LISP language. [5+5]



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