

Code No: 155CX

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year I Semester Examinations, September - 2021

PRINCIPLES OF PROGRAMMING LANGUAGES

(Common to CSE, IT)

Time: 3 hours

Max. Marks: 75

Answer any five questions
All questions carry equal marks

- 1.a) What are the potential benefits of studying programming language concepts?
b) Explain the process of compilation with neat flow diagram. [7+8]
- 2.a) Explain the characteristics of writability of a programming language.
b) Prove that the following grammar is ambiguous: [7+8]
 $\langle S \rangle \rightarrow \langle A \rangle$
 $\langle A \rangle \rightarrow \langle A \rangle + \langle A \rangle | \langle id \rangle$
 $\langle id \rangle \rightarrow a|b|c$
- 3.a) Write the process of implementing pointer and reference types.
b) Discuss about different assignment statements. [8+7]
- 4.a) How stack dynamic variables differs with heap dynamic variables?
b) Explain the design issues of multiple selection constructs. [8+7]
- 5.a) Describe the following parameter passing mechanisms.
i) Pass-by-value-result
ii) Pass-by-Reference
b) In what way coroutines different from conventional subprograms? [8+7]
- 6.a) Describe the deep-access method of implementing dynamic scoping.
b) What is parameterized ADT? How Java supports parameterized ADT? [8+7]
- 7.a) How Ada supports concurrency? Explain.
b) Define Thread. How thread synchronization is achieved in C#? [7+8]
- 8.a) Explain about fact and rule statements of Prolog.
b) Write a procedure in Python to find the greatest common divisor of two numbers. [7+8]

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