

Code: 9A05501

B.Tech IV Year I Semester (R09) Supplementary Examinations June 2017

**PRINCIPLES OF PROGRAMMING LANGUAGES**

(Information Technology)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions  
All questions carry equal marks

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- 1 (a) What are the different ways that a programming language can be implemented? Explain.  
(b) What is type checking? How it affects the reliability of a programming language?
- 2 (a) Explain what are the pre conditions and post conditions of given statement mean in axiomatic semantics.  
(b) Draw the two forms of parse trees for the sentence  $a = a + b * c$ .
- 3 (a) What is implicit type declaration? What are its disadvantages?  
(b) Explain different design choices used for array indexes in various languages.
- 4 (a) Write in detail about any two control structures implementation.  
(b) Write about different types of iterative statements.
- 5 (a) Discuss how parameter- passing techniques are implemented.  
(b) Explain how multi-dimensional arrays are passed as parameters.
- 6 (a) What are two categories of concurrency? What is the need for studying concurrency?  
(b) What is task synchronization? Explain in detail two kinds of task synchronization with examples.
- 7 (a) Write a Prolog program to compute the sum of numbers using arrays.  
(b) Define CUT predicate in Prolog.
- 8 (a) Explain the lists and list operations using ML.  
(b) What is the use of value declaration statement in ML? Explain it with an example.

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