



C14-IT-503

4646

BOARD DIPLOMA EXAMINATION, (C-14)

OCT/NOV—2016

DIT—FIFTH SEMESTER EXAMINATION

PRINCIPLES OF PROGRAMMING LANGUAGES

Time : 3 hours ]

[ Total Marks : 80

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**PART—A**

3×10=30

**Instructions** : (1) Answer **all** questions.  
(2) Each question carries **three** marks.  
(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. List the language categories.
2. Write the concepts of programming language.
3. Differentiate between syntax and semantics.
4. Define denotational semantics.
5. Define associative semantics.
6. List the design issues of pointers.
7. List boolean expressions.

- \* 8. What is a short-circuit evaluation?
- 9. Differentiate between static and dynamic scope.
- 10. List the subprogram characteristics.

**PART—B**

10×5=50

**Instructions** : (1) Answer *any five* questions.  
(2) Each question carries **ten** marks.  
(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

- 11. Explain the following programming paradigms :
  - (a) Imperative
  - (b) Object-oriented
  - (c) Functional programming
  - (d) Logic programming
- 12. Explain syntax of a “for” statement in Pascal using BNF notation and give syntax graphs.
- 13. Explain the approach of using axiomatic semantics to prove the correctness of a program.
- 14. Define array and record. Classify arrays based on storage allocation. Write the advantages and disadvantages of allocating memory during compilation time and run-time.
- 15. Define control structures. Explain the control structures of (a) statement level and (b) compound statements.
- \* 16. Explain the arithmetic, relational and boolean expressions.
- 17. Explain the design issues of subprograms.
- 18. Explain the importance of generic subprograms.

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