Reg. No. | | | | | | | | | | | | |

Question Paper Code : 63344

M.E./M.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2015.

Second Semester

Computer Science and Engineering

CP 7203 — PRINCIPLES OF PROGRAMMING LANGUAGES

(Common to M.Tech. Information Technology)

(Regulation 2013)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Enumerate the two significant shortcomings of computer hardware during early 1950's which were overtaken by speed coding.

2. Give a precise description of the two levels of use of the operational semantics.

3. What is a descriptor? List the fields in the complie time descriptor for static strings.

4. Distinguish between operator precedence and operator associativity.

5. List any four design issues of subprograms.

6. What is the task of a linker?

7. Specify the purpose of a pure virtual function in C++.

8. Mention the purpose of event listeners in Java.

9. Define functional form and referential transparency.

10. What is the purpose of backtracking mechanism in prolog? Give its demerits.

PART B — (5 × 16 = 80 marks)

11. (a) Compare BNF with EBNF. Explain the extensions of EBNF, giving relevant examples of the advantages of EBNF over BNF.

Or

(b) Describe how recursive decent parsing is done for a rule with a single RHS.

12. (a) (i) What are the two important aspects of type binding? Explain the two types of binding with suitable examples. (8)

(ii) Give a brief note on pointer and reference types. (8)

Or

(b) (i) Discuss about the design of four assignment statements with examples. (8)

(ii) Describe about the design and syntax of the selection and loop structures. (8)

13. (a) Give a detailed account of the various models which guide in the implementation of the basic parameter transmission modes.

Or

(b) (i) What is an activation record? Give the activation record format for a recursive function and explain the same. (8)

(ii) Discuss the two ways in which local variables and non-local references to them can be implemented in a dynamic-scoped language. (8)

14. (a) Describe the purpose of semaphores and monitors in the synchronization of tasks.

Or

(b) (i) Define a thread and explain the different ways in which C# threads can be synchronized. (8)

(ii) How an exception handler could be written in Java to handle an exception? Explain. (8)

15. (a) (i) With examples, explain the definition of functions in scheme program. (8)

(ii) Write short notes on programming with ML. (8)

Or

(b) Discuss in detail about the facts, rules and goal statements in Prolog.
