COMP – 3-3 (RC)

S.E. (Comp.) (Semester – III) (RC) Examination, Nov./Dec. 2012
PRINCIPLES OF PROGRAMMING LANGUAGES

Duration : 3 Hours | Max. Marks : 100

Instruction : *Attempt **any five** questions such that at least **one** question from **each** Module is selected.*

MODULE – I

1. a) Write a note on virtual computers. **5**

   b) Construct a parse tree for the following grammar using BNF grammar.
   $P = ((Q * R) + (S * T))$
   Also comment on ambiguous and unambiguous grammar with examples. **8**

   c) Explain type conversion and coercion with an example. **7**

2. a) What is 'Bootstrapping' ? Explain in brief any 3 important attributes and bindings of a data object. **5**

   b) Define 'Binding Time'. State and explain the class of Binding Times. **5**

   c) Draw the structure of compiler and explain lexical analysis. **5**

   d) What is Language Standardization ? Explain the types of standards. **5**

MODULE – II

3. a) Explain the PASCAL forward declaration. **8**

   b) Explain the static rules associated with block structured program. **8**

   c) What is an Activation Record ? Explain the attributes. **4**

4. a) Explain the various control statements provided in C++. **6**

   b) What do you mean by sharing explicit variables ? Explain with an example. **6**

P.T.O.

c) Write short notes on : 8

i) Term rewriting

ii) Unification

iii) Current Instruction Pointer(CIP)

iv) Current Environment Pointer (CEP)

MODULE – III

5. a) Explain the properties of type 2 and type 3 grammars giving examples of each. 8

b) Write a note on Exception and Exception Handlers. 6

c) State and explain the different principles of programming languages. 6

6. a) Explain with the help of an example, recursion in C-language. 8

b) What do you mean by critical section ? Explain with an example. 6

c) Write a prolog program to find the sum of first N natural numbers. 6

MODULE – IV

7. a) Explain data objects in LISP. 8

b) Write a Pascal program to implement fibonacci series. 6

c) Explain the various sequence control statements in ADA. 6

8. a) Explain the following with respect to Pascal : 12

i) Primitive data types

ii) Inheritance

b) Explain how sequence control is implemented in small talk. 8