[Total No. of Questions : 8]

S.E. (Comp.) (Semester - III) (RC) Examination, Nov./Dec. - 2011
PRINCIPLES OF PROGRAMMING LANGUAGES

Duration : 3 Hours **Total Marks : 100**

Instructions : 1) Answer any five questions by selecting at least one question from each Module.
2) Make suitable assumptions.

MODULE - I

Q1) a) Explain briefly the syntactic elements of a language. [6]

b) Write a note on firmware Computers. [5]

c) State and explain the various phases of Compiler. [9]

Q2) a) Explain the following : [10]
i) Information hiding.
ii) Subprogram Activation.

b) Draw the parse tree for the following expression [4]
Y = ((v*u) + (W–X)).

c) Explain the following Syntactic criteria. [6]
i) Readability.
ii) Writability.
iii) Ease of translation.

MODULE - II

Q3) a) Distinguish between Implicit & Explicit sequence Control. [8]

b) Give the tree structure representation of the following expression [8]
assuming C-precedence. $-B \pm \sqrt{B^2 - 4ac} / 2 * a.$
Also give the prefix and postfix form of it.

c) Discuss the following methods of transmitting parameters. [4]
i) Call by name.
ii) Call by reference.

Q4) a) Discuss the following : [6]
   i) Current Instruction Pointer.
   ii) Current-Environment Pointer.

b) Explain with an example pattern matching in prolog. [6]

c) With the help of neat diagram discuss subprogram call return structure. [8]

MODULE - III

Q5) a) Explain the following : [6]
   i) Monitors.
   ii) Semaphores.

b) Explain the properties of Type2 and type 3 grammars giving examples of each. [8]

c) State and explain the various principles of Parallel Programming. [6]

Q6) a) Write a program in C to implement Switch-Case statement. [8]

b) Explain Guarded commands with example. [5]

c) Write a program in FORTRAN to find the sum of elements of an array. [7]

MODULE - IV

Q7) a) Write a Pascal program to implement the Fibonacci series. [8]

b) Explain the various sequence control statements in Ada. [6]

c) Explain the advantages of Object-based languages. [6]

Q8) a) Explain the following with respect to PASCAL. [12]
   i) Sequence Control.
   ii) Numeric data types.

b) Explain the sequence control in LISP. [8]

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