[Total No. of Questions : 8]

S.E. (Comp.) (Semester - III) Examination, May 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) List and explain the various attributes of a good Programming Language. [8]

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

c) What is Translation or Compilation? Explain the various specialized types of Translators. [7]

Q2) a) Write a short note on Virtual Computers. [5]

b) State and explain the various phases of compiler. [9]

c) Define Binding time. State and explain the classes of Binding times. [6]

MODULE - II

Q3) a) Explain the control statements for expressing the basic control forms of Composition, alternation and iteration. [6]

b) Explain the PASCAL forward Declaration. [8]

c) Explain the following methods for transmitting parameters : [6]

i) Call by Name. ii) Call by Reference.

Q4) a) Explain briefly Associations and Referencing Environments with respect to Subprograms. [8]

b) Explain the following : [6]

i) Current-instruction pointer (CIP).

ii) Current-environment pointer (CEP).

c) Explain Uniform Evaluation rule in evaluating an expression with an example. [6]

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MODULE - III

Q5) a) Explain the properties of Type 2 and Type 3 grammars giving examples of each. [8]

b) State and explain the different principles of Parallel Programming languages. [6]

c) Write a note on exception and exception handlers. [6]

Q6) a) Explain producer consumer problem. Discuss its solution using semaphores. [8]

b) Write a Prolog program to find the sum of first N natural numbers. [6]

c) What do you mean by Critical section. Explain with an example. [6]

MODULE - IV

Q7) a) Explain Data objects in LISP. [8]

b) Write a Pascal program to implement the Fibonacci series. [6]

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

Q8) a) Explain how Sequence control is implemented in Smalltalk. [8]

b) Explain the following with respect to PASCAL. [12]

i) Primitive data types.

ii) Inheritance.