

POKHARA UNIVERSITY

Level: Bachelor
Semester: Spring
Programme: BE
Course: Principles of programming language

Year : 2019
Full Marks: 100
Pass Marks: 45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt all the questions.

- a) What are the importance and objectives of principles of programming Languages? 7
- b) Explain the design of a pseudo code and its implementation. Highlight the functional enhancements brought by the Pseudo code. 8
2. a) "Subprograms are implemented using Activation records in Fortran". Explain with the help of examples. 7
- b) Illustrate looping in FORTRAN by writing a program to find out the sum and average of first ten odd natural numbers. 8
3. a) Explain the History and Motivation of ALGOL programming .Also Explain and mention its failure factors. 7
- b) Prepare a lecture note of control structure. Data structure, Name structure and Syntactic structure in ALGOL. 8
4. a) What is LISP? Explain about car and cdr indicators with examples. 7
- b) How LISP has maintained the simplicity principle? Explain the searching techniques provided by it. 8
5. a) What are different forms of message template in SMALLTALK? Explain them. 8
- b) "Smalltalk belongs to new programming paradigm". Explain in reference to class, object and object oriented Extensions. 7
6. a) Translate the following expressions into LISP 8
 - i) $(-1)^k k^{1/k}$
 - ii) $\frac{n!}{r!(n-r)!}$
- b) "COMMON permits aliasing, which is dangerous in FORTAN". Justify the statement. 7
7. Write short notes on: (**Any two**) 2×5
 - a) Recursive Interpreters and storage Reclamation in LISP
 - b) Descriptive tools in ALGOL
 - c) Nested scope in BLOCK
 - d) Phenomenology of programming languages