BTS-III(R/S)-02.22-0016 Reg. No. | | | | | | | | |

A

B.Tech. Degree III Semester Regular/Supplementary Examination February 2022

CS 19-202-0305 PRINCIPLES OF PROGRAMMING LANGUAGES

(*2019 Scheme*)

Time: 3 Hours Maximum Marks: 60

PART A

(Answer *ALL* questions)

(8 × 3 = 24)

I. (a) What does it mean for a program to be reliable? Define Aliasing with example.

(b) Discuss the BNF and EBNF notation with suitable example.

(c) What are the three general characteristics of subprograms?

(d) Briefly explain coroutines with suitable diagram.

(e) Explain the exception handling mechanism with suitable example.

(f) Design and implementation issues of object oriented programming.

(g) Application of functional programming and logic programming languages.

(h) With suitable example, explain resolution in logic programming.

PART B

(4 × 12 = 48)

II. (a) Briefly explain various programming paradigms. (5)

(b) How readability and writability can be achieved in a programming language? (7)

OR

III. (a) Describe denotational semantics. (6)

(b) Give the denotational semantics for a binary number by specifying the grammar. (6)

IV. (a) How the variables can be characterized? Explain. (6)

(b) What are named constants? Give example. (6)

OR

V. Briefly describe static scope and dynamic scope with suitable examples. Also explain the advantages and disadvantages. (12)

VI. Explain the polymorphism and inheritance with suitable examples. (12)

OR

VII. Compare and contrast the features of object-oriented languages Smalltalk, C++ and Java. (12)

VIII. (a) Explain Lamda Calculus with suitable example. (6)

(b) Explain any five functions used in LISP. (6)

OR

IX. Describe the programming language, PROLOG and also write the deficiencies of PROLOG. (12)

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