



R17 Regulation

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A' Grade)

Subject code: 1P5EB

B.Tech III Year I Semester Supplementary Examinations, January 2023
Principles of Programming languages

(CSE)

Maximum Marks: 70

09-01-2023

Duration: 3 hours

- Note:
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
 3. Part B consists of 5 Units. Answer any one full question from each unit.
 4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks

(10x2M=20 Marks)

- 1 Write about pure interpretation
- 2 Define preprocessor
- 3 Write about static array
- 4 In what way reserved words are better than keywords?
- 5 List the design issues of functions
- 6 Briefly Explain co-routines
- 7 Define light weight tasks & heavy weight tasks
- 8 Draw the flow diagram of task states
- 9 Define strict & non strict programming language
- 10 Define functional & imperative languages

Part-B

Answer All the following questions.

(5x10M=50Marks)

- 11 Explain in detail about various language implementation methods. [10]

OR

- 12 A) Explain the concept of ambiguous grammar and unambiguous grammar by considering following CFG & string

$\langle \text{assign} \rangle \rightarrow \langle \text{id} \rangle = \langle \text{expr} \rangle$

$\langle \text{id} \rangle \rightarrow A|B|C$

$\langle \text{expr} \rangle \rightarrow \langle \text{expr} \rangle + \langle \text{term} \rangle | \langle \text{term} \rangle$

$\langle \text{term} \rangle \rightarrow \langle \text{term} \rangle * \langle \text{factor} \rangle | \langle \text{factor} \rangle$

$\langle \text{factor} \rangle \rightarrow (\langle \text{expr} \rangle) | \langle \text{id} \rangle$

String: $A=B+C*A$

- B) List & explain reasons to study programming languages. [5+5]

- 13 Describe arithmetic expressions with the help of design issues. [10]

OR

- 14 A) Explain associative arrays & records (discuss design issues if any).
B) Explain relational & Boolean expressions with appropriate examples. [5+5]
- 15 Explain in-detail about generic subprograms & show how generic programs are implemented in various popular programming languages. [10]
OR
- 16 A) How multidimensional arrays can be passed as subprogram parameters, explain with relevant examples.
B) Describe pass-by-result, pass-by-value-result and pass by reference with suitable examples. [5+5]
- 17 A) Explain abstract Data types in C++.
B) Explain abstract Data types in Java. [5+5]
OR
- 18 Describe subprogram level concurrency by discussing design issues. [10]
- 19 A) Explain **python's** classes & instances variables with examples.
B) Classify **python's** objects & explain each with an example. [5+5]
OR
- 20 A) List & explain the methods of **LISTS** with an example for each method.
B) Can stack & queue be implemented using **LISTS**? Explain with relevant examples. [5+5]