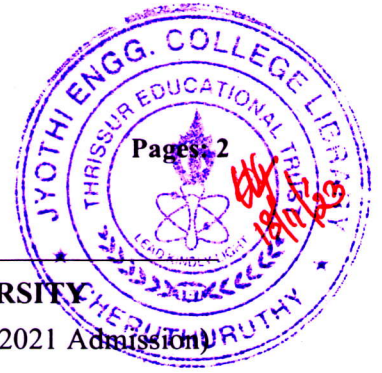


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Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

Fourth Semester B.Tech (Minor) Degree Examination June 2023 (2021 Admission)

**Course Code: CST282**

**Course Name: PROGRAMMING METHODOLOGIES**

Max. Marks: 100

Duration: 3 Hours

**PART A**

*(Answer all questions; each question carries 3 marks)*

Marks

- |    |  |   |
|----|--|---|
| 1  | What are Programming Environments? Give Examples                                       | 3 |
| 2  | Compare the different types of type binding?   | 3 |
| 3  | What is Aliasing?  | 3 |
| 4  | Explain the concept of dynamic method binding with an example?                         | 3 |
| 5  | What is Unconditional Branching?   | 3 |
| 6  | Explain general sub program characteristics?   | 3 |
| 7  | What are events. Explain event handling?   | 3 |
| 8  | Is it mandatory to use constructors in object oriented languages? Justify your answer. | 3 |
| 9  | What is fundamental concepts of subprogram level concurrency?                          | 3 |
| 10 | Explain the working 'let' constructs in scheme?  | 3 |

**PART B**

*(Answer one full question from each module, each question carries 14 marks)*

**Module -1**

- |    |  |    |
|----|--|----|
| 11 | a) Explain different criteria for evaluating languages?  | 10 |
|    | b) Draw the Block diagram of Compilation Process?  | 4  |
| 12 | a) Define static, stack-dynamic, explicit heap dynamic and implicit heap dynamic variables. What are their advantages and disadvantages? | 10 |
|    | b) Define lifetime, scope, static scope and dynamic scope?   | 4  |

**Module -2**

- |    |   |   |
|----|---|---|
| 13 | a) Define the design issues for arrays?   | 7 |
|    | b) Explain row major order and column major order with examples?  | 7 |
| 14 | a) Elaborate the design issues of arithmetic expressions in detail?   | 8 |
|    | b) Define operator precedence, operator associativity, functional side effect and referential transparency? | 6 |

**Module -3**

- 15 a) In what way 'C' s for statement is more flexible than that of many other languages? 7  
b) Elaborate Unconditional Branching? 7
- 16 a) Compare the different implementation models in parameter passing? 12  
b) Define closures and Coroutines? 2

**Module -4**

- 17 a) What are the design issues in object oriented languages? 6  
b) Explain the following object oriented features: (i) Encapsulation (ii) Inheritance (iii) Constructors and Destructors (iv) Operator Overloading (v) Polymorphism. 8
- 18 a) What is an exception handler? Explain how exceptions are handled in object oriented language? 7  
b) Explain in detail Event handling in Java? 7

**Module -5**

- 19 a) Describe the fundamental concept in Subprogram-Level Concurrency? 7  
b) Explain the concepts for Semaphore and Monitors.? What advantage do monitors have over semaphores? 7
- 20 a) Compare Functional and Imperative programming languages? 7  
b) Explain the basic elements of Prolog? Describe the applications of logic programming? 7

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