

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
Eighth Semester B.Tech Degree Regular Examination June 2023 (2019 Scheme)

Course Code: CST424

Course Name: PROGRAMMING PARADIGMS

Max. Marks: 100

Duration: 3 Hours

PART A

Answer all questions, each carries 3 marks.

		Marks
1	Differentiate readability and writability of a programming language.	(3)
2	What is meant by scope and lifetime? Give example	(3)
3	Differentiate between enumeration and subrange types.	(3)
4	What is meant by dangling pointer? How to solve the dangling pointer problem?	(3)
5	What are the different parameter passing modes?	(3)
6	Write a short note on coroutines.	(3)
7	Define CIR , vtable.	(3)
8	Write the advantages and disadvantages of inheritance.	(3)
9	Differentiate cooperation synchronization and competition synchronization with an example.	(3)
10	What are the differences between CONS, LIST, and APPEND?	(3)

PART B

Answer any one full question from each module, each carries 14 marks.

Module I

- 11 a) Describe the factors that affect the design of programming language. (6)
- b) What is meant by referencing environment of a statement? (8)

Show the referencing environment at the indicated program points (1), (2), (3) & (4) for the following program segment. Assume that the programming language is dynamically scoped

```
void sub1() {
int a, b;
... ----- 1
} /* end of sub1 */
void sub2() {
int b, c;
```

```

... ----- 2
sub1();
} /* end of sub2 */
void main() {
int c, d;
... ----- 3
sub2();
} /* end of main */

```

OR

- 12 a) What are the domains of computer applications and their associated languages? (6)
- b) Consider the following pseudo code: (8)

```

x : integer := 1
y : integer := 2
procedure add
  x := x + y
procedure second(P : procedure)
  x : integer := 2
  P()
procedure first
  y : integer := 3
  second(add)
----- ----main starts here-----
first()
write integer(x)

```

- (a) What does this program print if the language uses static scoping? Give reasons.
- (b) What does it print if the language uses dynamic scoping? Give reasons.

Module II

- 13 a) Describe the lazy and eager approaches for reclaiming garbage (6)
- b) Explain different types of assignment statements. (8)

OR

- 14 a) What is short circuit evaluation? Give example (6)
- b) What is record data type? What are the design issues? How to refer the fields in record? (8)

Module III

- 15 a) Write a short note on closure. (6)
- b) Explain various parameter passing mechanisms in programming languages. (8)

OR

- 16 a) Describe overloaded subprograms (6)
b) Differentiate counter controlled and logically controlled iteration statements used in programming languages (8)

Module IV

- 17 a) Write dynamic method binding in detail. (6)
b) What is meant by an exception handler? Explain how exceptions are handled in object-oriented languages. (8)

OR

- 18 a) Illustrate how a virtual method table can be used for implementing dynamic method binding (6)
b) Explain the design issues of object oriented programming language. (8)

Module V

- 19 a) Discuss the role of monitors in concurrency. (6)
b) Explain the searching strategies used in Prolog. Why backward chaining is preferred over forward chaining in Prolog? (8)

OR

- 20 a) Define synchronous message passing (6)
b) What are the applications of logic programming languages? (8)
