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| **SESSION** | **APRIL 2025** |
| **PROGRAM** | **BACHELOR OF COMPUTER APPLICATIONS (BCA)** |
| **SEMESTER** | **II** |
| **COURSE CODE & NAME** | **DCA1209 PRINCIPLES OF PROGRAMMING LANGUAGE** |
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**Set-I**

**Q1. Explain the need and importance of programming language. 10**

**Ans 1.**

**Need and Importance of Programming Language**

**Programming Language**

A programming language is a formal language comprising a set of instructions that produce various kinds of output. These instructions are used to implement algorithms and control the behavior of machines, especially computers. Programming languages are vital for communicating with a computer and enabling it to perform specific tasks accurately and efficiently.

**Need for Programming Language**

The primary need for a programming language arises from the necessity to give precise

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**Q2. Explain different programming paradigms in detail. 10**

**Ans 2.**

**Programming Paradigms**

A programming paradigm refers to a style or way of programming that is based on certain principles and concepts. It provides a framework for solving problems using programming languages. Different paradigms offer different approaches to code organization, logic implementation, and data handling. Understanding these paradigms is essential for selecting the right approach to solve a specific computational problem efficiently.

**Procedural Programming Paradigm**

The procedural programming paradigm is one of the oldest and most widely used paradigms. It is

**Q3. What is Compiler? Why is it used? 10**

**Ans 3.**

**Definition and Basic Function of a Compiler**

A compiler is a special software program that translates high-level programming language code (like C, C++, or Java) into machine-level language or binary code (0s and 1s), which a computer’s processor can understand and execute. The process of compilation involves converting the entire source code at once into an executable file, typically producing fast-running programs. The compiler checks the entire code for errors, translates it, and reports any syntax

**Set-II**

**Q4. Explain the concept of recursion in detail. 10**

**Ans 4.**

**Recursion in Programming**

Recursion is a programming concept where a function calls itself in order to solve a problem. Instead of solving the entire problem at once, the recursive function solves a small part and relies on the function calling itself again with a modified parameter. This continues until it reaches a base case—a condition that stops further recursive calls. Recursion is commonly used in problems that have a repetitive or nested structure, such as mathematical computations and data

**Q5. Explain Object Oriented Programming in detail. 10**

**Ans 5.**

**Object-Oriented Programming**

Object-Oriented Programming (OOP) is a programming paradigm that organizes software design around data, or objects, rather than functions and logic. An object can be defined as an instance of a class that contains both data and methods. The OOP approach is based on real-world entities and emphasizes code reusability, modularity, and scalability. It allows developers to build

**Q6. Explain various scripting languages in detail. 10**

**Ans 6.**

**Scripting Languages**

Scripting languages are high-level programming languages used to write scripts—short programs that automate tasks and control applications. Unlike traditional programming languages, scripting languages are typically interpreted rather than compiled, meaning the code is executed line-by-line at runtime. They are widely used for web development, automation, system