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| **SESSION** | **SEPT 2024** |
| **PROGRAM** | **BCA** |
| **SEMESTER** | **VI** |
| **COURSE CODE & NAME** | **DCA3102 VISUAL PROGRAMMING** |
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**Set-I**

**1. What is event driven programming?**

**Ans 1.**

**Event Driven Programming**

Event-driven programming is a programming paradigm in which the flow of a program is determined by events such as user actions (e.g., mouse clicks, key presses), sensor outputs, or messages from other programs. Unlike traditional procedural programming, where execution occurs sequentially from top to bottom, event-driven programming responds to specific events by triggering functions or methods associated with those events, called event handlers. This approach is particularly popular in graphical user interface (GUI) development and real-time systems where responsiveness and interaction with users or external inputs are critical.

In event-driven programming, an event is any action or occurrence recognized by software, often

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**2. What is Data adapter? Explain its role in database.**

**Ans 2.**

A data adapter is an essential component in database connectivity, particularly in the context of ADO.NET, a data access technology provided by Microsoft. It acts as a bridge between a database and a data source such as a DataSet, facilitating the transfer of data between them. The primary role of the data adapter is to fill the DataSet with data retrieved from a database and synchronize changes made in the DataSet back to the database. The data adapter is often used in disconnected data architecture, where applications can manipulate data offline and apply changes to the database later.

In the ADO.NET framework, the data adapter provides methods like Fill and Update. The Fill

**3. Explain briefly what a just-in-time compiler does.**

**Ans 3.**

**Just-In-Time Compiler (JIT) Explanation**

A **Just-In-Time (JIT) compiler** is a critical component of modern programming languages and execution environments, particularly those relying on virtual machines, like Java, .NET, and certain Python implementations. JIT compilers aim to optimize program execution by dynamically converting high-level bytecode or intermediate representations into native machine code at runtime. This technique enhances the performance of interpreted languages that would otherwise be slower due to their line-by-line execution.

**Functioning of JIT Compiler**

At its core, a JIT compiler bridges the gap between interpreted execution and static compilation.

**Set-II**

**4. Describe the Tersus platform's architecture.**

**Ans 4.**

**Tersus Platform Architecture**

The **Tersus platform** is a visual programming environment designed to facilitate the rapid development of web and mobile applications. Its architecture is unique, enabling developers to build software through graphical models rather than writing code. By providing a highly visual, drag-and-drop interface, Tersus streamlines application development while reducing the complexity traditionally associated with programming.

**Overview of Tersus Architecture**

The Tersus architecture comprises multiple components that work together to enable model-driven

**5. Discuss the role and significance of constructors and destructors in VB.NET Object-Oriented Programming.**

**Ans 5.**

**Role and Significance of Constructors and Destructors in VB.NET Object-Oriented Programming**

In VB.NET, constructors and destructors play a pivotal role in object-oriented programming (OOP). They help manage the lifecycle of objects, from initialization to cleanup, ensuring efficient memory and resource management.

**Role and Significance of Constructors**

A **constructor** is a special method that is automatically called when an instance of a class is created. It is primarily used to initialize the fields and properties of a class and set default values

**6. Explain following.**

**a. Dataset**

**b. Data Reader**

**c. Data Adapter**

**d. XML**

**e. Components of Tersus Plateform**

**Ans 6.**

**a. Dataset**

A **Dataset** is an in-memory representation of a database that stores tables, relations, and constraints. It is a disconnected data architecture, meaning it can hold data retrieved from a database without maintaining an active connection. In VB.NET, the Dataset object belongs to the System.Data namespace.

The Dataset acts as a container for multiple **DataTables**, each representing a table with rows and columns. It allows for data manipulation, searching, and updating offline. Once changes are made,