

(4) TBC-502/TBI-501

5. (a) Discuss the architecture of ADO and how it differs from the architecture of ADO.NET. What were the primary limitations of ADO that led to the development of ADO.NET? (CO5)
- (b) Discuss the primary data providers available in ADO.NET (e.g., SQL server, OLE DB, ODBC, Oracle) and their distinct features. (CO5)
- (c) Develop a C# application that establishes a connection to a database, retrieves data and displays the information in the application. (CO5)

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H Roll No.

TBC-502/TBI-501

B. C. A./B. Sc. (IT) (FIFTH SEMESTER)
END SEMESTER

EXAMINATION, Dec., 2023

PROGRAMMING WITH .NET C#

Time : Three Hours

Maximum Marks : 100

Note : (i) All questions are compulsory.

(ii) Answer any *two* sub-questions among (a), (b) and (c) in each main question.

(iii) Total marks in each main question are **twenty**.

(iv) Each sub-question carries 10 marks.

1. (a) Describe the primary components of the .NET platform, including the Common Language Runtime (CLR) and the Framework Class Library (FCL). (CO1)

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- (b) Discuss the advantages of NET's platform independence. How does .NET support cross-platform development ? (CO1)
 - (c) Name some of the programming languages that are support by the .NET framework. Explain how these languages interact with the CLR. (CO1)
2. (a) Discuss the differences between value types and reference types in C#. Provide examples of each. (CO2)
- (b) Describe the necessity of type casting in C# when converting between data types. Provide examples demonstrating the casting of data types. (CO2)
 - (c) Discuss the usage of conversion methods like Convert.ToInt32, ToString, and Parse in C#. Explain their purpose and differences. (CO2)
3. (a) Describe the process of creating objects from classes in C# and the usage of constructors. (CO3)

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- (b) Explain the difference between method overloading and method overriding in C#. Provide examples for each. (CO3)
 - (c) What are breakpoints in Visual Studio ? How do they aid in the debugging process ? Discuss the different types of stepping (step into, step over, step out) available in Visual Studio debugger and when each one is used. (CO3)
4. (a) What is ASP.NET and what are its key features ? How does it differ from ASP (Classic ASP) ? (CO4)
- (b) Describe the Model-View-Controller (MVC) architectural pattern in ASP.NET. What are the main components of the MVC pattern ? (CO4)
 - (c) Explain the concept of Master Pages in ASP.NET and their significance in maintaining a consistent layout across a web application. (CO4)