

Time: 2½ (Hours)

[Total Marks: 75]

N. B.: (1) **All** questions are **compulsory**.(2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.(3) Answers to the **same question** must be **written together**.(4) Numbers to the **right** indicate **marks**.(5) Draw **neat labeled diagrams** wherever **necessary**.(6) Use of **Non-programmable** calculators is **allowed**.1. **Attempt any three of the following:**

15

- a. What is .NET framework? Draw and explain .Net framework architecture.
- b. Describe in detail the main features of the Common Language Runtime (CLR).
- c. Explain the working of the foreach loop in C# with a suitable example.
- d. Describe the characteristics and uses of these classes in c#
i) abstract ii) sealed iii) static iv)partial v) derived
- e. What is an Assembly? Explain Types of Assembly.
- f. Elaborate on the concepts of Boxing and Unboxing and explain their importance in .NET type conversion.

2. **Attempt any three of the following:**

15

- a. Describe the different files and folders used in an ASP.NET application and discuss their purpose in detail.
- b. What is web.config file? Explain <CustomError> and <ConnectionStrings> tags in web.config file.
- c. Elaborate on the various types of validation controls available in ASP.NET and explain how they are implemented.
- d. Describe the AdRotator control in ASP.NET and explain how it is used with an example.
- e. Differentiate between the ListBox and DropDownList controls in ASP.NET. Describe any three common properties of these controls.
- f. What is Postback? Explain IsPostBack property with suitable example

3. **Attempt any three of the following:**

15

- a. Describe the concept of user-defined exceptions. How can they be implemented in a C# program?
- b. How can you create, add, and set the expiry of a cookie in ASP.NET? Illustrate with an example program.
- c. Describe the different types of state management in ASP.NET and elaborate on Application state management.
- d. What is the connection between Master Pages and Content Pages? Explain how they work together in ASP.NET.
- e. Explain exception handling mechanism with example.
- f. Explain how View State works in ASP.NET. List its major benefits and limitations.

4. Attempt ***any three*** of the following:

15

- a. What is ADO.NET ? Explain its Architecture.
- b. Differentiate between DataSet and DataReader.
- c. Explain the DataReader object in ADO.NET and discuss how it retrieves data from a database.
- d. Explain the concept of data sources in ASP.NET and elaborate on their types and uses.
- e. Differentiate between ListView and GridView controls in ASP.NET. Explain the ListView control with an example.
- f. Discuss the core components of the ADO.NET Data Provider and their roles in data access.

5. Attempt ***any three*** of the following:

15

- a. What do you understand by Authentication and Authorization in web applications?
- b. Describe the use of Typography classes in Bootstrap. Which class is used to apply bold styling to text?
- c. Discuss the benefits and working of AJAX in ASP.NET with reference to UpdatePanel and ScriptManager.
- d. Explain how Bootstrap simplifies front-end development and list its major features.
- e. What is meant by NuGet Application? Why it is used in web based application?
- f. Elaborate on how UpdateProgress provides feedback during asynchronous operations in AJAX-enabled web pages.
