

Tribhuvan University
Institute of Science and Technology
2081

Bachelor Level / sixth-semester / Science

Computer Science and Information Technology(CSC367)

NET Centric Computing

Full Marks: 60 + 20 + 20

Pass Marks: 24 + 8 + 8

Time: 3 Hours

SECTION A (Marks: 1 x 10)

Attempt any TWO questions.

1. Distinguish between collection and generics. What are named and positional attribute parameters? Write a program to create your own exception when the user gives subject name than "C#".
2. How do you create controller? Illustrate with an example. Describe the procedure of rendering HTML with Razor with scenario.
3. List some advantages of Entity Framework over ADO.NET. Assume a database named "IOST" with a table FACULTY(Course_Name, CourseID, No_of_Semester, fee). Insert some records using ADO.NET and retrieve the fee of records having name CSIT.

SECTION B (Marks: 8 x 5)

Attempt any EIGHT questions.

4. Describe the procedure of deploying .NET core application.
5. How does ASP.NET core MVC provides patterns-based way to build dynamic website? Explain.
6. Define state management. Explain the parts of state management on the client side.
7. Write a program to validate the form that takes input user name, password and phone number using JQuery. All fields must be non-empty and phone number must contain exactly 10 digits.
8. Distinguish between roles and policies. Explain about Kestrel web server in ASP.NET core.
9. Describe the life cycle of Dependency Injection container.
10. Create a class named EMPLOYEE as super class and ENGINEER and DOCTOR as sub class. Make your own assumptions as properties and methods.
11. What is the task of ORM? Discuss about open redirect attacks.
12. Write short notes on:
 - Polymorphism
 - Hidden Field

2080

Group A

Attempt any two questions.

1

How do you cache the information of the client and what are its uses? Create a table named BAG(ID, Brand, Price, Date). Perform the following operations using Entity Framework Core.

- Update the Price of those Book to 2000 which are published on 2022.
- Delete the Book which are published in 1981
- Retrieve the Brand of Book having price greater than 500

2

How do you manage state on stateless HTTP? How do you validate form using JQuery? Describe with your own assumptions.

3

What are the needs for partial class and sealed class? How do you relate delegate with events? State the steps to deploy .NET core application.

Group B

Attempt any eight questions.

4

Describe the importance of MVC pattern in designing web applications.

5

How do you create controller? Mention some requirements for rendering HTML.

6

What is the role of adapter class in ADO.NET? List some features of URL routing.

7

Explain the chances of SQL injection attack with a scenario.

8

Define claim and policy in terms of authorization. How and when do you create hidden fields?

9

Mention the two types of services managed by IoC container and how they are registered?

10

Differentiate between generic and non-generic collections. Write a simple program to create generic class with generic constructor, generic member variable, generic property and generic method.

11

What are tag helpers? What tag helper provides?

12

Write short notes on (any two)

- Lambda Expression
- Cross Site Request Forgery
- Single Page Application

2079

Group A

Attempt any two questions.

1

What is the purpose of web form? Write a program to demonstrate the concept of collection and generics.

2

Explain the uses of cookies. What types of vulnerabilities can occur in web application? Show the case of Cross-site Scripting attack.

3

Describe any two hosting models for core application. Design a client side validation application using jquery for taking input data from student in Library Management System, assume your own assumptions.

Group B

Attempt any eight questions.

4

How to you assign roles, claims and policies? Explain with an example.

5

What types of problems lead to SQL injection attack? Discuss any two types of ASP.Net host models.

6

What does single page application means? Discuss about server side strategies.

7

Write an ADO. Net application to read the data from the existing table MOVIE(id, name, genre), where genre is "comedy".

8

Differentiate between .NET and ASP.NET frameworks. How do you test the .NET core applications?

9

Define HTTP. Explain the MVC pattern.

10

What does dependency injection and IOC container means? Explain.

11

What is tag helper? Discuss about razor syntax with an example.

12

Write short notes on (any two):

1. Lambda Expression
2. Containerization using Docker
3. Delegates and Events

2078

Group A

Attempt any two questions.

1

Differentiate between struct and enum. Why do we need to handle the exception? Illustrate with an example with your own customized exception.

2

Explain the procedure for building, running, and deploying .NET core applications. Write a program to show the possibility of SQL injection attack.

3

What are the advantages of stateless HTTP in ASP.NET core application? Create a method to insert a record (3, "John", 12000) onto the table Employee having fields EmployeeId(int), Name varchar(200), Salary(int) using Entity Framework.

Group B

Attempt any eight questions.

4

Define open redirect attacks. Discuss about docker and containerization.

5

What are named and positional attribute parameters? Describe the .Net architecture design and principles.

6

Explain about request and response message format with example.

7

Why do we need to validate the form? How can you use react for this?

8

Define data model and data context. What does URL routing mean?

9

Give an example to manage the session state.

10

How can you prevent SQL injection attack? Explain with an example.

11

Explain the process to deploy the core application.

12

Write short notes on (any two)

a. LINQ

b. Open Redirected Attack

c. Query String