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Seventh Semester B.E. Degree Examination, July/August 2022 Introduction to Dot Net Framework for Application Development

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Define and list binary operators in C#. Explain the various binary operators available in C#. (08 Marks)
- b. A person having flu symptoms, wants to know whether he has to go to OPD or to Covid19 helpdesk. Write a C# program using cascaded if-else, which obtains travel history from the user as either Y/y or N/n. If the travel history is Y or y, then program must instruct the person to go to Covid19 helpdesk. If not i.e if the input is N or n, the program must instruct to go to OPD. If any other character is entered by user, suitable message should be displayed, asking user to enter correct input. (08 Marks)
- c. Define variable. Explain its declaration and initialization with syntax and examples. (04 Marks)

OR

- 2 a. Distinguish between entry controlled and exit controlled loops in C# with syntax and examples for each. (10 Marks)
- b. Explain checked and unchecked statements and expressions. (06 Marks)
- c. Write a C# program to find largest of three numbers entered by the user using logical AND operator. (04 Marks)

Module-2

- 3 a. Explain different types of constructors with examples. (10 Marks)
- b. What is the need of access specifiers in C#. Explain public and private access specifiers in detail with examples. (10 Marks)

OR

- 4 a. Define Enum with syntax. Write a C# program to create a Enumeration type for months and display value of June as 6. (07 Marks)
- b. Explain boxing and unboxing in C# with examples. (08 Marks)
- c. Differentiate between structures and classes. (05 Marks)

Module-3

- 5 a. Explain the following with examples:
 - i) Declaring a params array
 - ii) Using Params object [] (06 Marks)
- b. Write a C# program that creates a derived class called car, which inherits features such as name, price, model from a base class called vehicle. The base class is having a constructor to initialize these features. The derived class is having a feature called seating-capacity which is initialized using its constructor. All the features from vehicle class and car class must be displayed through a method in derived class. (09 Marks)
- c. What is meant by garbage collector? Explain briefly the steps that garbage collector follows at highlevel. (05 Marks)

OR

- 6 a. Implement the using statement and IDisposable interface with an example. (08 Marks)
b. Write a C# program that has a base class called laptop with fields name, price, processor, RAM and hard disk. Create a derived class from this base class which inherits the features from the laptop class and prints the details for three different laptops (Note: All laptops should have different name, price, processor, RAM and hard disk sizes). (08 Marks)
c. Differentiate between method overloading and method overriding. (04 Marks)

Module-4

- 7 a. Define indexer. List and explain set of operators provided by C# that you can use to access and manipulate the individual bits in an int. (07 Marks)
b. What is the use of generics in C#? write a C# program to swap two numbers using generic method. (08 Marks)
c. Explain read-only and write-only properties with examples. (05 Marks)

OR

- 8 a. Write recursive algorithm for
i) Inserting an item I into an ordered Binary Tree B.
ii) Display contents of a ordered Binary Tree, by visiting each node in sequence. (09 Marks)
b. Define collection class. List different collection classes with description for each and explain any one in detail. (08 Marks)
c. Differentiate between indexers and arrays. (03 Marks)

Module-5

- 9 a. Explain operator overloading constraints. Write a C# program for overloading modulus (%) operator. (10 Marks)
b. Define LINQ. Explain LINQ to select, filter and order data with an example. (10 Marks)

OR

- 10 a. Explain declaring, subscribing, unsubscribing and raising events. (10 Marks)
b. Explain how delegates are used and give examples of any four delegates in the .NET framework class library. (10 Marks)

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