



NATIONAL SCHOOL OF BUSINESS MANAGEMENT
BSc (Hons) Software Engineering (PU) – 20.1/20.2
BSc (Hons) Computer Networks (PU) – 20.1/20.2
BSc (Hons) Computer Security (PU) – 20.1/20.2

Year 01 Semester 02 Examination
14 July 2021

CS107.3 Object Oriented Programming with C#

Instructions to Candidates

- 1) **Answer all questions.**
- 2) **Time allocated for the examination is three (03) hours and 30 minutes (Including downloading and uploading time)**
- 3) Weightage of Examination: 60% out of final grade
- 4) Download the paper, provide answers to the selected questions in a word document.
- 5) Please upload the document with answers (Answer Script) to the submission link before the submission link expires
- 6) Answer script should be uploaded in PDF Format
- 7) Under any circumstances E-mail submissions would not be taken into consideration for marking. Incomplete attempt would be counted as a MISSED ATTEMPT.
- 8) The Naming convention of the answer script – Module Code_Subject name_Index No
- 9) You must adhere to the online examination guidelines when submitting the answer script to N-Learn.
- 10) Your answers will be subjected to Turnitin similarity check, hence, direct copying and pasting from internet sources, friend's answers etc. will be penalized.

Question 01**(20 Marks)**

1. Explain the importance of access specifiers in C# programming (5 Marks)
2. Compare and contrast public and protected access specifier in C# programming (4 Marks)
3. Assume that a variable is declared under private access specifier and that variable need to be access from another class. What will be your approach and explain your answer. (5 Marks)
4. Declare a class called **Student**, inside the class declare a private variable called **age** and construct relevant **get** and **set** methods. (6 Marks)

Question 02**(20 Marks)**

1. Explain the difference between an exception and syntax error in C# programming. (4 Marks)
2. Explain the importance of having exception handling in object oriented programming. (4 Marks)
3. What is the use of **try**, **catch** and **finally** blocks. Explain your answer. (5 Marks)
4. Declare a class called **Division** and construct a method inside the class. Inside the method get two numerical user inputs from the user and divide both inputs and display the answer. Use exception handling in appropriate positions. (7 Marks)

Question 03**(20 Marks)**

1. Explain what is meant by Inheritance in object-oriented programming. (5 Marks)
2. Draw an illustration to explain the inheritance concept. (3 Marks)
3. Write C# code or pseudocode to implement below scenarios,
 - a. Define a class called **Person** with three variables: **age**, **name** and **gender**. (3 Marks)
 - b. Derive a class called **Employee** from **Person** and add a variable called **Employee_ID** to the **Employee** class. (2 Marks)
 - c. Derive another class called **Specialist** from **Employee** and a variable called **Specialist_ID** to the **Specialist** class. (2 Marks)
 - d. Add a method in your **Specialist** class called **PrintValues()** to print all the data members (variables). (2 Marks)
 - e. Create an object to the **Specialist** class from your **Program** class and assign your **age**, **name** and **gender** to the variables in **Person** class. Assign some random values to the **Employee_ID** and **Specialist_ID**. (3 Marks)

Question 04**(20 Marks)**

Write a C# program to retrieve data from a database table using **DataSet** class and display those in a **DataGridView**. Assume that database, user interface are already created and construct your code inside a button click event.

Database : University

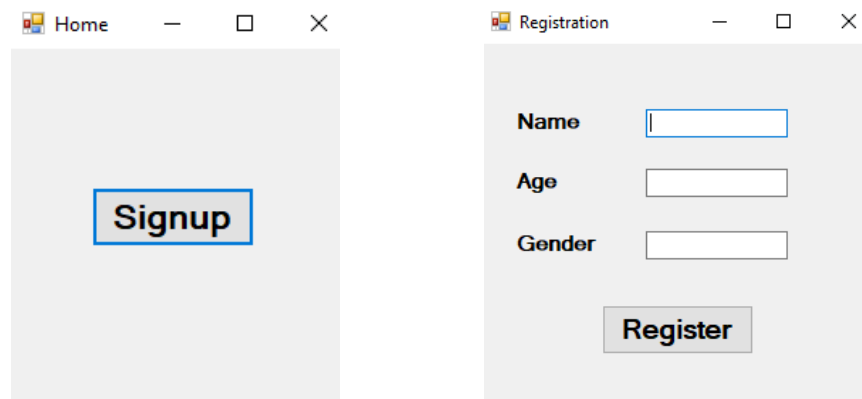
Table : Modules

Columns : ModuleCode, ModuleName and LectureHours

Connection String : DataProvider=.\SQLEXPRESS;Data Source=E:\NSBM\School.mdf

Question 05**(20 Marks)**

1. Compare and contrast class constructor and method. (5 Marks)
2. Declared a class called Student and define a parameterized constructor inside the class (use any parameter as you wish) (4 Marks)
3. Explain when the class constructor is being execute. (3 Marks)
4. What is the difference between Console application programs and Windows forms applications. (4 Marks)
5. Assume there are two form applications called Home and Registration as follows. Write a C# code to navigate from Home window to Registration window once user clicks on the button Signup. Construct the code for the button click event. (4 Marks)



*****End of the paper*****