Subject: C# AND .NET

Time: 3 Hours **Max. Marks: 100**

DECEMBER 2010

NOTE: There are 9 Questions in all.

- **Question 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.**
- **The answer sheet for the Q.1 will be collected by the invigilator after half an hour of the commencement of the examination.**
- **Out of the remaining EIGHT Questions, answer any FIVE Questions. Each question carries 16 marks.**
- **Any required data not explicitly given, may be suitably assumed and stated.**

Q.1 Choose the correct or the best alternative in the following: (2×10)

a. Polymorphism in C# can be achieved by:

(A) method overloading **(B)** operator overloading.
(C) class overloading **(D)** both A and B

b. An example of a user defined integer type which provides a way for attaching names to numbers:

(A) Class type **(B)** Array type
(C) Enumeration **(D)** None of the above.

c. Which of the following need not be overloaded:

(A) Method. **(B)** Constructors.
(C) Destructors. **(D)** None of the above

d. Delegates in C# are used for the following purpose:

(A) Callbacks **(B)** Event Handling
(C) Overloading **(D)** Both A and B

e. Delegates are of

(A) Value type **(B)** Reference Type
(C) Both A and B **(D)** None

f. An Exception is caused by:

(A) Syntax error **(B)** Run time Error
(C) Both A and B **(D)** None.

g. Which of the following cannot be used to compare two strings for equality**?**

(A) Overloaded Compare( ) Method
(B) Overloaded Equals( ) Method
(C) Overloaded Cmp( ) Method
(D) Overloaded === Operator

h. Which of the following is not a C# access modifier:

(A) Private **(B)** Internal
(C) Protected internal **(D)** Public internal.

i. Which of the following operator cannot be overloaded:

(A) = = **(B)** <<
(C) && **(D)** !=

j. Attempting to use a negative size for an array in C# could result in the following:

(A) Run time error. **(B)** Compile Time Error
(C) Static Error **(D)** None of the above.

Answer any FIVE Questions out of EIGHT Questions.
Each question carries 16 marks.

Q.2 a. With the help of a neat diagram explain the .NET frame work **(10)**

b. What are single file and multifile assemblies? Explain. **(6)**

Q.3 a. List and explain the various options available with C# compiler. **(8)**

b. Explain the various C# "Preprocessor" Directives **(8)**

Q.4 a. What is boxing and Unboxing? Explain both giving suitable examples **(8)**

b. What do you understand by 'params' method of parameter passing? Give an example. **(8)**

Q.5 a. What is encapsulation? Explain the two ways of enforcing encapsulation. **(8)**

b. Design a linked list class in C# with methods to insert and delete nodes. The list should have the capability to store any type of data **(8)**

Q.6 a. What do you understand by errors, bugs and exceptions? Give the important members of the system exception class. Illustrate the use of this class in throwing generic exceptions. **(10)**

b. What do you understand by object lifetime? Explain. **(6)**

Q.7 a. Distinguish between shallow and deep copy, as applied to cloning .How would you implement cloning for a custom class using ICloneable interface. **(10)**

b. Explain the importance of an interface in C#. With an example explain how an interface can be implemented in C#. **(6)**

Q.8 a. With the help of suitable example explain what delegates are in C#. **(8)**

b. What do you understand by asynchronous delegates in C#. Explain with an example. **(8)**

Q.9 a. Explain with the help of a diagram the logical view of an assembly in the .NET framework. **(6)**

b. Write and discuss the steps involved in building a shared assembly under .NET environment. **(10)**