

AMIETE – CS/IT

Time: 3 Hours

DECEMBER 2012

Max. Marks: 100

PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.

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 45 minutes 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. Which of the following statements are TRUE about the .NET CLR?
- (i) It provides a language-neutral development & execution environment.
 - (ii) It ensures that an application would not be able to access memory that it is not authorized to access.
 - (iii) It provides services to run "managed" applications.
 - (iv) It provides services to run "unmanaged" applications.
- (A) Only (i) and (ii) (B) Only (i), (ii) and (iv)
(C) (i), (ii), and (iii) (D) Only (iv)
- b. Which of the following is the root of the .NET type hierarchy?
- (A) System.Object (B) System.Type
(C) System.Base (D) System.Parents
- c. In C#.NET if we do not catch the exception thrown at runtime then which of the following will catch it?
- (A) Compiler (B) CLR
(C) Linker (D) Loader
- d. In which of the following collections is the Input/Output index-based?
- (i) Stack
 - (ii) Queue
 - (iii) BitArray
 - (iv) ArrayList
 - (v) HashTable
- (A) (i) and (ii) only (B) (iii) and (iv) only
(C) (v) only (D) All of these

- e. A class implements two interfaces each containing three methods. The class contains no instance data. Which of the following correctly indicate the size of the object created from this class?
- (A) 12 bytes (B) 24 bytes
(C) 0 byte (D) 8 bytes
- f. Which of the following modifier is used when a virtual method is redefined by a derived class?
- (A) overloads (B) override
(C) virtual (D) base
- g. Which of the following is the necessary condition for implementing delegates?
- (A) Class declaration (B) Inheritance
(C) Run-time Polymorphism (D) Exceptions
- h. Which of the following is NOT a Bitwise operator in C#.NET?
- (A) & (B) |
(C) << (D) ^
- i. Which of the following are reuse mechanisms available in C#.NET?
- (A) Inheritance & Polymorphism (B) Encapsulation & Polymorphism
(C) Templates & Encapsulation (D) Polymorphism
- j. Which of the following statements is correct?
- (A) A constructor can be used to set default values and limit instantiation.
(B) C# provides a copy constructor.
(C) Destructors are used with classes as well as structures.
(D) A class can have more than one destructor.

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

- Q.2** a. What is CLR? Explain the role of CLR in Dot NET Framework? (6)
- b. C# is type-safe language. Comment. (4)
- c. Explain any three CTS class characteristics. (6)
- Q.3** a. Explain the role of the Command Line Compiler. Build a basic application on C#. Define its elements. (5)
- b. Write five command line flags of cordbg.exe along with their meaning, (5)

Code: AC73/AT73**Subject: C# AND .NET**

- c. How can you generate a warning or error using pre-processor directives? Explain using suitable example. (6)
- Q.4** a. Explain the members of System.Object Class. (5)
- b. How do we execute a program having more than one class with the Main Methods? Explain with example. (6)
- c. What is a delegate? Enumerate the steps involved in creating and using a delegate. (5)
- Q.5** a. What do you mean by Encapsulation? How encapsulation is enforced at the syntactic level in C#? Write a C# program to illustrate. (8)
- b. What are abstract methods? Where are these used? Using a suitable C# program, illustrate how abstract methods are used to enforce a polymorphic trait on each descendent. (8)
- Q.6** a. List out the exception handling statements supported in C# and explain with an example. (10)
- b. What do you understand by interfaces in C#? what are the advantages of using interfaces? Explain. (6)
- Q.7** a. Explain the meaning of following interfaces of System.Collections: ICollection, IComparer, IEnumerable, IEnumerator and IList. (10)
- b. What is an “event” in C#? Show by an example how it is fired. (6)
- Q.8** a. Why do we need Asynchronous delegates? Explain how methods are invoked a synchronously. (6)
- b. Write notes on any **TWO** of the following by using appropriate C# code to illustrate: (10)
- (i) Versioning shared assemblies
 - (ii) Building a shared assembly
 - (iii) Using the multifile assembly
- Q.9** a. Explain the role of DOT Net Assemblies. (4)
- b. Write a program in C# to generate Fibonacci Series. (6)
- c. What is the role of CLR in garbage collection? Explain. (6)