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

AMIETE – CS/IT   (Current Scheme)

Time: 3 Hours   **JUNE 2015**   **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 is correct about Managed Code?

   (A) Managed code is the code that is compiled by the JIT compilers
   (B) Managed code is the code where resources are Garbage Collected
   (C) Managed code is the code that runs on top of Windows
   (D) Managed code is the code that is written to target the services of the CLR

b. Which of the following assemblies can be stored in Global Assembly Cache?

   (A) Private Assemblies   **(B)** Friend Assemblies
   (C) Shared Assemblies   **(D)** Public Assemblies

c. Code that targets the Common Language Runtime is known as _____.

   (A) Unmanaged   **(B)** Distributed
   (C) Legacy   **(D)** Managed Code

d. Which of the following is an 8-byte Integer?

   (A) char   **(B)** long
   (C) short   **(D)** byte

e. Which of the following does not store a sign?

   (A) short   **(B)** integer
   (C) long   **(D)** byte

f. Which of the following is the correct default value of a Boolean type?

   (A) 0   **(B)** 1
   (C) true   **(D)** false

g. Which of the following statements is correct about classes and objects in C#.NET?

(A) Class is a value type
(B) Objects of smaller size are created on the heap
(C) Smaller objects that get created on the stack can be given names
(D) Objects are always nameless

h. Can static procedures access instance data?

(A) True   **(B)** False

i. How many times can a constructor be called during lifetime of the object?

(A) As many times as we call it
(B) Only once
(C) Depends upon a Project Setting
(D) Any number of times before the object is deleted

j. Which of the following should be used to implement a 'Like a' or a 'Kind of' relationship between two entities?

(A) Polymorphism   **(B)** Encapsulation
(C) Templates   **(D)** Inheritance

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

Q.2   a.   List and briefly explain the core features of .NET   **(8)**

b.   Explain the role of .NET type Metadata.   **(8)**

Q.3   a.   How do you reference external assemblies in .NET? Explain with an example.
(8)

b.   Explain working with cse.exe response files.   **(8)**

Q.4   a.   Explain processing command line arguments in C# using a suitable C# code.
(8)

b.   Explain static methods and static constructors in C#.   **(8)**

Q.5   a.   Explain two pillars of OOP: Encapsulation and Inheritance w.r.t. C#.   **(8)**

b.   Explain how overloading is implemented in C#. Explain using an example in C#.   **(8)**

Q.6   a.   How can one debug system exceptions using vs .NET? Explain.   **(8)**

   b.   What is do you understand by Garbage collection in C#? Explain the significance of System.GC Type.   **(8)**

Q.7   a.   What does Icomparable interface specify?   Give a C# code for Icomparable interface.   **(8)**

   b.   Can we use interfaces in C# as polymorphic agent? Explain using an example.
          (8)

Q.8   a.   How do you define delegates in C#? Give an example program in C# for its implementation.   **(8)**

   b.   How can one invoke methods asynchronously? Explain using C# code.   **(8)**

Q.9   a.   What is GAC? How can one register an assembly using GAC? Explain.   **(8)**

   b.   Explain the following using C# code wherever required:
      (i)   Private assembly   (ii)   Shared assembly   **(8)**