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10CS/IS761

Seventh Semester B.E. Degree Examination, Dec.2016/Jan.2017

**C# Programming and •NET**

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions, selecting atleast TWO questions from each part.**

**PART – A**

- 1 a. Define •NET. Explain the limitation and complexities found within the technologies prior to •NET. Briefly explain how •NET attempts to simplify that. (08 Marks)  
b. With the help of neat diagram describe the workflow that takes place between your source code, a given •NET compiler and the •NET execution engine. (06 Marks)  
c. CLS rules apply only to those parts of a type that are expressed outside the defining assembly. Justify with illustration. (06 Marks)
- 2 a. Define metadata and manifest. Give the procedure to explore the metadata, manifest and intermediate language using “ildasm.exe”. (06 Marks)  
b. Describe the meaning of the following C# compiler options :  
i) @                      ii) /?                      iii) /addmodule                      iv)/baseaddress  
v) /bugreport                      vi) /checked                      vii) /codepage                      viii) /doc. (08 Marks)  
c. Explain the following aspects of VS•NET (IDE) :  
i) Solution explorer                      ii) Documenting code Via XML. (06 Marks)
- 3 a. Write a C# program that accepts five integers as a command line arguments and prints them in ascending order. The main method definition should have no arguments. (04 Marks)  
b. Explain the following C# programming aspects with an example :  
i) foreach/in                      ii) ref                      iii) params                      iv) enum. (08 Marks)  
c. List out the different members of System-Object and explain how would you override the following virtual methods for a user defined class.  
i) ToString                      ii) Equals                      iii) GetHashCode( ). (08 Marks)
- 4 a. With illustration explain the following C# static types :  
i) static methods                      ii) static data                      iii) static class  
iv) static constructor                      v) static properties. (10 Marks)  
b. What is containment/delegation? Illustrate with appropriate programming snippets. (06 Marks)  
c. Differentiate between classical and adhoc polymorphism with example. (04 Marks)

**PART – B**

- 5 a. Discuss with illustration how the encapsulation can be enforced using traditional accessors, mutators and class properties. (08 Marks)  
b. Define errors, bugs and exceptions. Discuss what is the role of •NET exception handling. (06 Marks)  
c. Write a C# application to illustrate, how to handle multiple exceptions. (06 Marks)
- 6 a. What is meant by object lifetime? Describe the role of •NET garbage collection, finalization process and adhoc destruction method with examples. (10 Marks)  
b. List out atleast five members of System-GC type and give their meaning. (05 Marks)  
c. Write a C# program to demonstrate a “Generation” objects. (05 Marks)

- 7 a. Differentiate between the following :
- i) Abstract classes and interfaces
  - ii) Synchronous and asynchronous delegates. (08 Marks)
- b. With an illustration discuss how the interface can be used to implement multiple inheritance. (06 Marks)
- c. Write a program in C# to simulate simple calculator using delegates. (06 Marks)
- 8 a. Mention the major elements of .NET binaries and explain each component. (10 Marks)
- b. Explain the steps involved in building and consuming a multiple assembly. (10 Marks)

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