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**MANIPAL UNIVERSITY**  
**SCHOOL OF INFORMATION SCIENCES**

THIRD SEMESTER M.Sc. Tech (EMBEDDED SYSTEMS & INSTRUMENTATION)  
DEGREE EXAMINATION – NOVEMBER 2017

**SUBJECT:** ESI 615.3 (Elective 1) – DOT NET TECHNOLOGIES

Tuesday, November 21, 2017

Time: 10.00 – 13.00 Hrs.

Max. Marks: 100

**✍ Answer ALL the questions**

1. What is Common Language Runtime? What are the services it provides? Show how .NET source files are converted into executable methods.  
(10 Marks)
2. Define CLR, CTS, CLS and base class libraries. With a sketch explain their relationships.  
(10 Marks)
3. Explain Array Lists and Multi-Dimensional arrays with an example.  
(5+5 = 10 Marks)
4. Explain the different member visibilities in C#.   
(10 Marks)
5. Explain, with an example, Constructors, Constructor Overloading and Copy Constructors in C#.   
(10 Marks)
6. Explain with an example the following keywords with respect to methods in C#
  - a. out
  - b. ref
  - c. param  
(3+3+4 = 10 Marks)
7. What is polymorphism? Explain with an example, how it is implemented in C#.   
(10 Marks)

8. Explain namespace in .NET. With example show how we can resolve name clashes across namespaces.

(10 Marks)

9. What are Exceptions? Explain the Atoms of .NET Exception Handling. Explain Exception handling clauses the **try**, **catch**, and **finally** keywords.

(10 Marks)

10. Write short notes on the following objects

- a) SqlConnection
- b) SqlCommand
- c) SqlDataReader.

(3+3+4 = 10 Marks)

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