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Note : Remove “Table of Content” before including in CP Book

Each Course Plan shall be printed and made into a book with cover page
Blooms Level in all sections match with A.2, only if you plan to teach / learn at higher levels

15CS564: DOT NET FRAMEWORK

A. COURSE INFORMATION

1. Course Overview

Degree:	BE	Program:	CS
Semester :	V	Academic Year:	2018-19
Course Title:	DOT NET FRAMEWORK	Course Code:	15CS564
Credit / L-T-P:	3-0-0	SEE Duration:	180 Minutes
Total Contact Hours:	40	SEE Marks:	80 Marks
CIA Marks:	20	Assignment	3
Course Plan Author:	Vamsi Krishna Y	Sign	Dt: 15-09-2018
Checked By:		Sign	Dt:

2. Course Content

Module	Module Content	Teaching Hours	Module Concepts	Blooms Level
1	**Introducing Microsoft Visual C# and Microsoft Visual Studio 2015:** Welcome to C#, Working with variables, operators and expressions, Writing methods and applying scope, Using decision statements, Using compound assignment and iteration statements, Managing errors and exceptions	8	syntax and semantics	L2
2	**Understanding the C# object model:** Creating and Managing classes and objects, Understanding values and references, Creating value types with enumerations and structures, Using arrays	8	Object Oriented concepts	L3
3	**Understanding parameter arrays:** Working with inheritance, Creating interfaces and defining abstract classes, Using garbage collection and resource management	8	Event Handling, Custom Interface	L6
4	**Defining Extensible Types with C#:** ,Implementing properties to access fields, Using indexers, Introducing generics, Using collections	8	properties, index's, generics and collections	L3
5	**Enumerating Collections:** Decoupling application logic and handling events, Querying in-memory data by using query expressions, Operator overloading	8	operator with behavior, queries to query in-memory	L6

3. Course Material

Module	Details	Available
1	Text books	
	John Sharp, Microsoft Visual C# Step by Step, 8th Edition, PHI Learning Pvt. Ltd. 2016	In Lib
		In Lib
2	Reference books	
	1.Christian Nagel, "C# 6 and .NET Core 1.0", 1st Edition, Wiley India Pvt Ltd, 2016.	In Lib
	2Andrew Stellman and Jennifer Greene, "Head First C#", 3rd Edition, O'Reilly Publications, 2013.	In Lib
	3Andrew Troelsen, "Prof C# 5.0 and the .NET 4.5 Framework", 6th Edition, Apress and Dreamtech Press, 2012.	In Lib
3	Others (Web, Video, Simulation, Notes etc.)	
		Not Available
	https://www.youtube.com/watch?v=akEr8cUAd5g	

4. Course Prerequisites

SNo	Course Code	Course Name	Module / Topic / Description	Sem	Remarks	Blooms Level
1	15CS45	Object Oriented Concepts	A Review of structures, Procedure–Oriented Programming system, Object Oriented Programming System, Console I/O,variables and reference variables, Function Prototyping, Function Overloading. Class and Objects Introduction, member functions and data, objects and functions, objects and arrays,	4		L3

Note: If prerequisites are not taught earlier, GAP in curriculum needs to be addressed. Include in Remarks and implement in B.5.

B. OBE PARAMETERS

1. Course Outcomes

#	COs	Teach. Hours	Concept	Instr Method	Assessment Method	Blooms' Level
15CS564.1	understanding the syntax and semantics of C# Application	8	Basic Concepts	Lecture, discussion	Assignment	L2
15CS564.2	Demonstrate Object Oriented concepts in C#	8	Basics of OOC	Lecture / PPT,	Assignment, seminar	L3
15CS564.3	Apply Event Handling mechanism in the application	4	Event Handling and Garbage Collection	Lecture / PPT, problem solving	Assignment, seminar	L3
15CS564.4	Design custom interfaces	4	Interface (built in ,Custom)	Lecture, discussion	Question and answer, test	L6
15CS564.5	Discuss the concepts of properties, index's	4	Properties and index's	Discussion, lecture, ppt	Presentation , assignment	L2
15CS564.6	Illustrate generics and collections	4	generics and collections	Lecture, discussion	Assignment, viva	L3
15CS564.7	Develop own operator with behavior	4	Operator	Lecture, discussion	Assignment	L3
15CS564.8	Design queries to query in-memory data	4	Queries of Data	Discussion, lecture , PPT	Seminar and assignment	L6
-	**Total**	**40**	-	-	-	-

Note: Identify a max of 2 Concepts per Module. Write 1 CO per concept.

2. Course Applications

SNo	Application Area	CO	Level
1	Stand alone C# applications	CO1	L2
2	OOPs based programming	CO2	L3
3	Menu based banking application	CO3	L3
4	Scientific application with custom interface real time	CO4	L6
5	File structure applications	CO5	L2
6	Standalone Application with garbage collections	CO6	L3
7	Reusable application	CO7	L3
8	Database application with real data	CO8	L6

Note: Write 1 or 2 applications per CO.

3. Articulation Matrix

-	Course Outcomes	Program Outcomes												
#	COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO 9	PO 10	PO1 1	PO1 2	Level
15CS564.1	understanding the syntax and semantics of C# Application	√				√								L2,L3
15CS564.2	Demonstrate Object Oriented concepts in C#	√	√			√								L3
15CS564.3	Apply Event Handling mechanism in the application	√	√			√								L3,L4
15CS564.4	Design custom interfaces	√	√	√	√	√			√	√	√			L6
15CS564.5	Discuss the concepts of properties, index's	√	√			√								L2,L3
15CS564.6	Illustrate generics and collections	√	√	√		√								L3
15CS564.7	Develop own operator with behavior	√	√	√		√								L3,L4
15CS564.8	Design queries to query in-memory data	√	√	√	√	√				√				L6
Note: Mention the mapping strength as 1, 2, or 3														

4. Mapping Justification

Mapping		Justification	Mapping Level
CO	**PO**	**-**	**-**
CO1	PO1	Yes Mapping (Requires the basic Engineering core knowledge but at the remembrance level)	
	PO2	Not Required (it is restricted to remembrance not at the level of analysis)	
	PO3	No Mapping (Learning at basic level no design or development of solutions)	
	PO4	No Mapping (No investigation or interpretation of content)	
	PO5	Yes Mapping (modern tool Is used ,visual studio)	
	PO6	No Mapping (No social cultural issues with syntax and semantics)	
	PO7	No Mapping (No impact on Environmental and sustainability issues with respect to the syntax and semantics)	
	PO8	No Mapping (since there is no team work or lead ,for the ethical work)	
	PO9	No Mapping (since there is no team work or lead)	
	PO10	No Mapping (as there Is no communication , the level expected Is remembering)	
	PO11	No Mapping (as there Is no communication for project and finance, the level expected Is remembering)	
	PO12	No Mapping (as there Is only understanding and remembering ,there Is no change in syntax)	
CO2	PO1	Yes Mapping (Requires the basic Engineering core knowledge of OOC but at the remembrance level)	
	PO2	Yes Mapping (Requires the analysis of OOC in reusable applications at understanding level)	
	PO3	No Mapping (Learning at basic level no design or development of solutions)	
	PO4	No Mapping (No investigation or interpretation of content)	
	PO5	Yes Mapping (modern tool Is used ,visual studio)	
	PO6	No Mapping (No social cultural issues with under of the syntaz and semantics)	
	PO7	No Mapping (No impact on Environmental and sutainability issues with under of the syntaz and semantics)	
	PO8	No Mapping (since there is no team work or lead for the ethical work)	
	PO9	No Mapping (since there is no team work or lead)	
	PO10	No Mapping (as there Is no communication , the level expected Is remembering)	
	PO11	No Mapping (as there Is no project development involved with respect to **ooc** at the remembrance level, the level expected Is remembering)	
	PO12	No Mapping (as there Is only understanding and remembering of ooc , there is no life long learning)	
CO3	PO1	Yes Mapping (Requires the basic Engineering core knowledge of OOC and C#, but at the remembrance level)	
	PO2	Yes Mapping (Requires the analysis of Error handling mechanic in different applications)	
	PO3	No Mapping (Learning at basic level no design or development of solutions)	

	PO4	No Mapping (No investigation or interpretation of content)	
	PO5	Yes Mapping (modern tool Is used ,visual studio)	
	PO6	No Mapping (No social cultural issues with under of the syntaz and semantics)	
	PO7	No Mapping (No impact on Environmental and sutainability issues with under of the syntaz and semantics)	
	PO8	No Mapping (since there is no team work or lead for the ethical work)	
	PO9	No Mapping (since there is no team work or lead)	
	PO10	No Mapping (as there Is no communication , the level expected Is remembering)	
	PO11	No Mapping (as there Is no communication , the level expected Is remembering)	
	PO12	No Mapping (as there Is only understanding and remembering)	
CO4	PO1	Yes Mapping (Requires the basic Engineering core knowledge of OOC and C#, but at the remembrance level)	
	PO2	Yes Mapping (Requires the analysis of Error handling mecthehanic in different applications)	
	PO3	Yes Mapping (design of GUI requires the customized application)	
	PO4	Yes Mapping (Deep investigation and interpretation of content is required in different application development for Interface's)	
	PO5	Yes Mapping (modern tool Is used ,visual studio)	
	PO6	No Mapping (No social cultural issues with under of the syntaz and semantics)	
	PO7	No Mapping (No impact on Environmental and sutainability issues with under of the syntaz and semantics)	
	PO8	Yes Mapping (since there is a team work required for requirement gathering in designing the interface , the ethical principals are important)	
	PO9	Yes Mapping (since there is a team work required for requirement gathering in designing the interface)	
	PO10	Yes Mapping (communication is required as there is a team work involved)	
	PO11	No Mapping (as there Is no communication , the level expected Is remembering)	
	PO12	No Mapping (as there Is only understanding and remembering)	
CO5	PO1	Yes Mapping (Requires the basic Engineering core knowledge of OOC and C#, but at the remembrance level)	
	PO2	Yes Mapping (Requires the analysis of properties and index in different web applications)	
	PO3	No Mapping (Learning at basic level no design or development of solutions)	
	PO4	No Mapping (No investigation or interpretation of content)	
	PO5	Yes Mapping (modern tool Is used ,visual studio)	
	PO6	No Mapping (No social cultural issues with concepts of properties and index's)	
	PO7	No Mapping (No impact on Environmental and sutainability issues with concepts of properties and index's)	
	PO8	No Mapping (since there is no team work or lead for the ethical	

		work)	

	PO9	No Mapping (since there is no team work or lead)	
	PO10	No Mapping (as there Is no communication , the level expected Is remembering)	
	PO11	No Mapping (as there Is no communication , the level expected Is remembering)	
	PO12	No Mapping (as there Is only understanding and remembering)	
CO6	PO1	Yes Mapping (Requires the basic Engineering core knowledge of OOC and C#, but at the remembrance level)	
	PO2	Yes Mapping (Requires the analysis of generics and collection in File Structure applications)	
	PO3	yes Mapping (Learning at basic level of design and development is required in generics and collections while simulating the collections)	
	PO4	No Mapping (No investigation or interpretation of content)	
	PO5	Yes Mapping (modern tool Is used ,visual studio)	
	PO6	No Mapping (No social cultural issues with concepts of properties and index's)	
	PO7	No Mapping (No impact on Environmental and sutainability issues with concepts of properties and index's)	
	PO8	No Mapping (since there is no team work or lead for the ethical work)	
	PO9	No Mapping (since there is no team work or lead)	
	PO10	No Mapping (as there Is no communication , the level expected Is remembering)	
	PO11	No Mapping (as there Is no communication , the level expected Is remembering)	
	PO12	No Mapping (as there Is only understanding and remembering)	
CO7	PO1	Yes Mapping (Requires the basic Engineering core knowledge of OOC and C#, but at the remembrance level)	
	PO2	Yes Mapping (Requires the analysis of operators)	
	PO3	yes Mapping (Learning at basic level of design and development is required in operators and with its overloading)	
	PO4	No Mapping (No investigation or interpretation of content)	
	PO5	Yes Mapping (modern tool Is used ,visual studio)	
	PO6	No Mapping (No social cultural issues with concepts of properties and index's)	
	PO7	No Mapping (No impact on Environmental and sutainability issues with concepts of properties and index's)	
	PO8	No Mapping (since there is no team work or lead for the ethical work)	
	PO9	No Mapping (since there is no team work or lead)	
	PO10	No Mapping (as there Is no communication , the level expected Is remembering)	
	PO11	No Mapping (as there Is no communication , the level expected Is remembering)	
	PO12	No Mapping (as there Is only understanding and remembering)	
CO8	PO1	Yes Mapping (Requires the basic Engineering core knowledge of OOC and C#, but at the remembrance level)	

	PO2	Yes Mapping (Requires the analysis of memory handling in different applications)	
	PO3	Yes Mapping (design of queries in time and memory management of customized application)	
	PO4	Yes Mapping (Deep investigation and interpretation of content is required in memory handling with respect to the queries different application development for Interface's)	
	PO5	Yes Mapping (modern tool Is used ,visual studio)	
	PO6	No Mapping (No social cultural issues with under of the syntaz and semantics)	
	PO7	No Mapping (No impact on Environmental and sutainability issues with under of the syntaz and semantics)	
	PO8	No Mapping (since there is no team work or lead for the ethical work)	
	PO9	yes Mapping (since there is a multidisciplinary settings in memory management)	
	PO10	No Mapping (communication is not required as there is no team work involved)	
	PO11	No Mapping (as there Is no communication , the level expected Is remembering)	
	PO12	No Mapping (as there Is only understanding and remembering)	

Note: Write justification for each CO-PO mapping.

5. Curricular Gap and Content

SNo	Gap Topic	Actions Planned	Schedule Planned	Resources Person	PO Mapping
1	15CS45 / Object Oriented Concepts				
2					
3					
4					
5					

Note: Write Gap topics from A.4 and add others also.

6. Content Beyond Syllabus

SNo	Gap Topic	Actions Planned	Schedule Planned	Resources Person	PO Mapping
1					
2					
3					
4					
5					

Note: Anything not covered above is included here.

C. COURSE ASSESSMENT

1. Course Coverage

Module #	Title	Teaching Hours	No. of question in Exam						CO	Levels
			CIA-1	CIA-2	CIA-3	Asg	Extra Asg	SEE		
1	Introducing Microsoft Visual C# and Microsoft Visual Studio 2015	8	2	-	-	1	1	2	CO1	L2
2	Understanding the C# object model	8	2	-	-	1	1	2	CO2	L3
3	Understanding parameter arrays	8	-	2	-	1	1	2	CO3, CO4	L3,L6
4	Defining Extensible Types with C#	8	-	2	2	1	1	2	CO5, CO6	L2,L3
5	Enumerating Collections	8	-	-	2	1	1	2	CO7, CO8	L3,L6
-	**Total**	**40**	**4**	**4**	**4**	**5**	**5**	**10**	**-**	**-**

Note: Distinct assignment for each student. 1 Assignment per chapter per student. 1 seminar per test per student.

2. Continuous Internal Assessment (CIA)

Evaluation	Weightage in Marks	CO	Levels
CIA Exam – 1	15	CO1, CO2	L2,L3
CIA Exam – 2	15	CO3,CO4,CO5, CO6	L3,L6, L2, L3
CIA Exam – 3	15	CO5,CO6,CO7, CO8	L2,L3,L3 L6
Assignment - 1	05	CO1, CO2	L2,L3
Assignment - 2	05	CO3,CO4,CO5, CO6	L3,L6, L2,L3
Assignment - 3	05	CO5,CO6,CO7, CO8	L2,L3,L3,L6
Seminar - 1			
Seminar - 2			
Seminar - 3			
Other Activities – define – Slip test			
Final CIA Marks	**20**	**-**	**-**

Note : Blooms Level in last column shall match with A.2 above.

D1. TEACHING PLAN - 1

Module - 1

Title:	Introducing Microsoft visual c#	Appr Time:	8 Hrs
a	***Course Outcomes***	-	**Blooms**
-	The student should be able to:	-	**Level**
1	understanding the syntax and semantics of C# Application	CO1	L2
b	***Course Schedule***	-	-
Class No	**Module Content Covered**	**CO**	**Level**
1	Introducing Microsoft Visual C# and Microsoft Visual Studio 2015	C01	L2
2	Welcome to C#	C01	L2
3	Working with variables, operators and expressions	C01	L2
4	Writing methods and applying scope	C01	L2
5	Using decision statements	C01	L2
6	Using compound assignment	C01	L2
7	Using iteration statements	C01	L2
8	Managing errors and exceptions	C01	L2
c	**Application Areas**	**CO**	**Level**
1	Stand alone C# applications	CO1	L2
2	OOPs based programming	CO1	L2
d	**Review Questions**	-	-
1	What is Namespace? How namespace is used to solve name-clashing problem, Explain with Example.	CO1	L2
2	What is an assembly? Explain with Examples	CO1	L2
3	Explain how to create a blank universal windows platform app using visual studio 2015 with example.	CO1	L2
4	Discus a C# console application	C01	L2
5	Explain how the precedence and associativity of operators determine and how expressions are evaluated in C#.	C01	L2
6	Explain how to write methods that take optional parameters and how to call methods by using named parameters.	C01	L2
7	Explain how to use the compound assignment operators to update numeric variables and append one string to another	C01	L2
8	Explain how to use while, for, and do statements to execute code repeatedly while some Boolean condition is true with example	C01	L2
9	Explain the two things you need write exception-aware programs. Explain with example how to catch and handle exceptions by using the try and catch constructs	C01	L2
10			
e	**Experiences**		
1			
2			

Module – 2

Title:	Understanding C# object model	Appr Time:	8 Hrs
a	***Course Outcomes***	-	**Blooms**
-	The student should be able to:	-	**Level**
1	Demonstrate Object Oriented concepts in C#	CO2	L3
b	***Course Schedule***	-	-
Class No	**Module Content Covered**	**CO**	**Level**
1	Understanding the C# object model.	CO2	L2
2	Creating and Managing classes and objects.	CO2	L3
3	Creating and Managing classes and objects.	CO2	L3
4	Understanding values and references	CO2	L3
5	Understanding values and references	CO2	L2
6	Creating value types with enumerations and structures	CO2	L2
7	Creating value types with enumerations and structures	CO2	L2
8	Using arrays	CO2	L2
c	**Application Areas**	**CO**	**Level**
1	Array based application	CO2	L3
2	Stand alone algorithm application	CO2	L2
d	**Review Questions**	-	-
1	Explain the purpose of encapsulation with example.	CO2	L2
2	What is constructor? Explain necessity of overloading constructors with example.	CO2	L1
3	Explain how we create a with example 1) Sharing field 2) static field by using the const keyword 3)Static Class 4) Anonymous classes .	CO2	L2
4	Explain the differences between a value type and a reference type with example.	CO2	L2
5	Apply the concept of boxing and unboxing? Explain with examples.	CO2	L3
6	Explain how arguments are passed as method parameters by using the ref and out keywords	CO2	L2
7	Explain how to control the accessibility of members by using the public and private keywords with examples.	CO2	L2
8	Write and call your own constructors in C#. Explain how to create anonymous classes with examples.	CO2	L2
e	**Experiences**		
1			
2			

E1. CIA EXAM – 1

a. Model Question Paper - 1

Crs Code:	15CS564	Sem:	V	Marks:	30	Time:	75 minutes		
Course:	DOT NET FRAMEWORK								
-	**-**	**Note: Answer any 2 questions, each carry equal marks.**					**Marks**	**CO**	**Level**
1	a	Define identifiers. Explain rules to be followed while writing identifiers. List out the different keywords					9	CO1	L2
	b	Explain the different primitive's data types with size, range and example for each					6	CO1	L2
		OR							
2	a	Explain the concept of creating methods with example					9	CO1	L2
	b	Explain applying scope for local scope and class scope with examples.					6	CO1	L2
3	a	Explain the different arithmetic operators with examples.					5	CO1	L2
	b	What are variables? List out the rules for naming variables.					5	CO1	L1
	c	Explain the optional parameters and named argument with examples.					5	CO1	L2
		OR							
4	a	Explain the Boolean operators with examples.					8	CO1	L2
	b	Explain the different decision making statements.					7	CO1	L2

b. Assignment -1

Note: A distinct assignment to be assigned to each student.

Model Assignment Questions							
Crs Code:	15CS564	Sem:	V	Marks:	5 / 10	Time:	90 – 120 minutes
Course:							
Note: Each student to answer 2-3 assignments. Each assignment carries equal mark.							

SNo	USN	Assignment Description	Marks	CO	Level
1		What is Namespace? How namespace is used to solve name-clashing problem, Explain with Example.	8	CO1	L2
2		What is an assembly? Explain with Examples	4	CO1	L2
3		Explain how to create a blank universal windows platform app using visual studio 2015 with example.	6	CO1	L2
4		Discus a C# console application	4	C01	L2
5		Explain how the precedence and associativity of operators determine and how expressions are evaluated in C#.	6	C01	L2
6		Explain how to write methods that take optional parameters and how to call methods by using named parameters.	6	C01	L2
7		Explain how to use the compound assignment operators to update numeric variables and append one string to another	5	C01	L2
8		Explain how to use while, for, and do statements to execute code repeatedly while some Boolean condition is true with example	6	C01	L2
9		Explain the two things you need write exception-aware programs. Explain with example how to catch and handle exceptions by using the try and catch constructs	6	C01	L2
10		Explain the purpose of encapsulation with example.	4	CO2	L2
11		What is constructor? Explain necessity of overloading constructors with example.	5	CO2	L1
12		Explain how we create a with example 1) Sharing field 2) static field by using the const keyword 3)Static Class 4) Anonymous classes .	8	CO2	L2
13		Explain the differences between a value type and a reference type with example	4	CO2	L2
14		Apply the concept of boxing and unboxing? Explain with examples.	4	CO2	L3
15		Explain how arguments are passed as method parameters by using the ref and out keywords		CO2	L2
16		Explain how to control the accessibility of members by using the public and private keywords with examples.		CO2	L2
17		Write and call your own constructors in C#. Explain how to create anonymous classes with examples.		CO2	L2

D2. TEACHING PLAN - 2

Module – 3

Title:	Parameterized Arrrays	Appr Time:	8 Hrs
a	***Course Outcomes***	-	**Blooms**
-	The student should be able to:	-	**Level**
1	Apply Event Handling mechanism in the application	CO3	L3
2	Design custom interfaces	CO4	L6
b	***Course Schedule***		
Class No	**Module Content Covered**	**CO**	**Level**
1	Understanding parameter arrays	CO3	L3
2	Working with inheritance	CO3	L3
3	Working with inheritance	CO3	L3
4	Working with inheritance	CO3	L3
5	Creating interfaces and defining abstract classes	CO4	L6
6	Creating interfaces and defining abstract classes	CO4	L6
7	Using garbage collection	CO4	L3
8	Using resource management	CO4	L3
c	**Application Areas**	**CO**	**Level**
1	Network applications	CO3	L3
2	Windows form based applications	CO4	L6
d	**Review Questions**	-	-
1	Write a method that can accept any number of arguments by using the params keyword.	CO3	L1
2	Discus method overloading? Explain with example.	CO3	L2
3	Explain how to create a derived class that inherits features from a base class with example.	CO3	L2
4	Explain how to implement an interface in a structure or class with examples.	CO3	L2
5	How to limit accessibility within an inheritance hierarchy by using the protected keyword, explain with example.	CO3	L6
6	Define extension methods as an alternative mechanism to using inheritance with examples	CO4	L2
7	Define an interface specifying the signatures and return types of methods with examples	CO4	L2
8	Explain how to implement an interface in a structure or class with examples	CO4	L2
9	Explain how to manage system resource by using garbage collection with example	CO4	L2
10	Write code in c# that runs when an object is destroyed	CO4	L6
e	**Experiences**	-	-
1			
2			

Module – 4

Title:	Defining Extensible Types with C#	Appr Time:	16 Hrs
a	***Course Outcomes***	-	**Blooms**
-	The student should be able to:	-	**Level**
1	**Discuss** the concepts of properties, index's	CO5	L2
2	Illustrate generics and collections	CO6	L3
b	***Course Schedule***		
Class No	**Module Content Covered**	**CO**	**Level**
1	Defining Extensible Types with C#	CO5	L2
2	Implementing properties to access fields	CO5	L2
3	Implementing properties to access fields	CO5	L2
4	Using indexers	CO5	L2
5	Introducing generics	CO6	L3
6	Introducing generics	CO6	L3
7	Using collections	CO6	L3
8	Using collections	CO6	L3
c	**Application Areas**	**CO**	**Level**
1	Custom control applications	CO6	L2
d	**Review Questions**	-	-
1	Discuss the properties? Explain how to create and use properties to provide controlled access to data in an object with examples.	CO5	L2
2	Explain how to control read access to properties by declaring get accessors with example	CO5	L2
3	Demonstrate interfaces in c# containing properties by using structures and classes.	CO5	L3
4	Explain how to control write access to properties by declaring set accessors with example	CO5	L2
5	Explain how to create interfaces that declare properties with example	CO5	L2
6	Explain how to generate properties automatically based on field definitions with examples	CO5	L2
7	Explain how to encapsulate logical fields by using properties in c#	CO6	L2
8	What is an indexer? Lists and explain set of operators provided by c# that you can use to access and manipulate the individual bits in an int	CO6	L1
9	Explain how to control read access to indexers by declaring get accessors with example	CO6	L2
10	Explain how to control write access to indexers by declaring set accessors with example	CO6	L2
e	**Experiences**		
1			
2			

E2. CIA EXAM – 2

a. Model Question Paper - 2

Crs Code:	15CS564	Sem:	V	Marks:	30	Time:	75 minutes		
Course:	DOT NET FRAMEWORK								
-	**-**	**Note: Answer any 2 questions, each carry equal marks.**					**Marks**	**CO**	**Level**
1	a	Explain how to control integer overflow by using the checked and unchecked keywords.					5	CO2	L2
	b	Explain how to raise exceptions from your own methods using the throw keywords.					3	CO2	L2
	c	Explain how to handle exceptions by using the try, catch and finally statements.					7	CO2	
		OR							
2	a	Define class. Explain how class is used in .net.					3	CO2	L3
	b	Briefly explain static methods and data.					5	CO2	L3
	c	Describe briefly the controlling accessibility in .net					7	CO2	L3
3	a	Explain the difference between a value type and reference type.					5	CO2	L3
	b	Explain how enumeration type is declared and used in .net.					5	CO2	L3
	c	Explain the concept of boxing and unboxing with examples					5	CO2	L1
		OR							
4	a	Define null values and nullable types with examples					8	CO3	L2
	b	Explain how a structure type is declared and used in .net.					7	CO3	L2

b. Assignment – 2

Note: A distinct assignment to be assigned to each student.

Model Assignment Questions							
Crs Code:	15CS564	Sem:	V	Marks:	5 / 10	Time:	90 – 120 minutes
Course:	DOT NET FRAMEWORK						
Note: Each student to answer 2-3 assignments. Each assignment carries equal mark.							

SNo	USN	Assignment Description	Marks	CO	Level
1		Write a method that can accept any number of arguments by using the params keyword.	6	CO3	L1
2		Discus method overloading? Explain with example.	4	CO3	L2
3		Explain how to create a derived class that inherits features from a base class with example.	6	CO3	L2
4		Explain how to implement an interface in a structure or class with examples.	6	CO3	L2
5		How to limit accessibility within an inheritance hierarchy by using the protected keyword, explain with example.	7	CO3	L6
6		Define extension methods as an alternative mechanism to using inheritance with examples	4	CO4	L2
7		Define an interface specifying the signatures and return types of methods with examples	4	CO4	L2
8		Explain how to implement an interface in a structure or class with examples	4	CO4	L2
9		Explain how to manage system resource by using garbage collection with example	4	CO4	L2
10		Write code in c# that runs when an object is destroyed	5	CO4	L6
11		Discuss the properties? Explain how to create and use properties to provide controlled access to data in an object with examples.	6	CO5	L2
12		Explain how to control read access to properties by declaring get accessors with example	7	CO5	L2
13		Demonstrate interfaces in c# containing properties by using structures and classes.	4	CO5	L3
14		Explain how to control write access to properties by declaring set accessors with example	5	CO5	L2
15		Explain how to create interfaces that declare properties with example	8	CO5	L2
16		Explain how to generate properties automatically based on field definitions with examples	5	CO5	L2
17		Explain how to encapsulate logical fields by using properties in c#	6	CO6	L2
18		What is an indexer? Lists and explain set of operators provided by c# that you can use to access and manipulate the individual bits in an int	4	CO6	L1
19		Explain how to control read access to indexers by declaring get accessors with example	8	CO6	L2
20		Explain how to control write access to indexers by declaring set accessors with example	8	CO6	L2
21					

D3. TEACHING PLAN - 3

Module – 5

Title:	Collections	Appr Time:	8 Hrs
a	***Course Outcomes***	-	**Blooms**
-	The student should be able to:	-	**Level**
1	Develop own operator with behavior	CO7	L3
2	Design queries to query in-memory data	CO8	L6
b	***Course Schedule***		
Class No	**Module Content Covered**	**CO**	**Level**
1	Enumerating Collections	CO7	L3
2	Decoupling application logic and handling events	CO7	L3
3	Decoupling application logic and handling events	CO7	L3
4	Querying in-memory data by using query expressions	CO8	L6
5	Querying in-memory data by using query expressions	CO8	L6
6	Querying in-memory data by using query expressions	CO8	L6
7	Operator overloading	CO7	L3
8	Operator overloading	CO7	L3
c	**Application Areas**	**CO**	**Level**
1	Web based services	CO7	L4
2	Collections for data customization	CO8	L6
d	**Review Questions**		
1	What exactly is an enumerable collection? Demonstrate an enumerator that you can be used to iterate over the elements in a collection with examples	CO7	L3
2	Implement an enumerator automatically by creating an iterator in C#. Explain.	CO7	L4
3	Explain how to provide additional iterators that can step through the elements of a collection in different sequences.	CO7	L2
4	Implementing the IEnumerable interface in c#	CO7	L4
5	Implement how to call a method through a delegate in c#.	CO7	L4
6	Explain how to create an instance of a delegate to refer to a specific method	CO7	L6
7	Implement how to call a method through a delegate in c#	**CO8**	L4
8	Define a lambda expression to specify the code to be executed by a delegate	CO8	L2
9	Explain how Declare an event field with examples	CO8	L2
10	Explain how to handle an event by using a delegate	CO8	L2
11			
e	**Experiences**	-	-
1			
2			

E3. CIA EXAM – 3

a. Model Question Paper - 3

Crs Code:	15CS564	Sem:	V	Marks:	30	Time:	75 minutes		
Course:	DOT NET FRAMEWORK								
-	**-**	**Note: Answer any 2 questions, each carry equal marks.**					**Marks**	**CO**	**Level**
1	a	Explain how to create interfaces that declare properties with example					8	CO5	L2
	b	Explain how to generate properties automatically based on field definitions with examples					7	CO5	L2
		OR							
2	a	Explain how to provide additional iterators that can step through the elements of a collection in different sequences.					7	CO7	L2
	b	Implementing the IEnumerable interface in c#					8	CO7	L4
3	a	What is an indexer? Lists and explain set of operators provided by c# that you can use to access and manipulate the individual bits in an int					7	CO6	L1
	b	Explain how to control read access to indexers by declaring get accessors with example					8	CO6	L2
		OR							
4	a	Explain how Declare an event field with examples					8	CO8	L2
	b	Explain how to handle an event by using a delegate					7	CO8	L2

b. Assignment – 3

Note: A distinct assignment to be assigned to each student.

Model Assignment Questions									
Crs Code:	15CS564	Sem:	V	Marks:	5 / 10	Time:	90 – 120 minutes		
Course:	DOT NET FRAMEWORK								
Note: Each student to answer 2-3 assignments. Each assignment carries equal mark.									
SNo	**USN**	**Assignment Description**					**Marks**	**CO**	**Level**
1		What exactly is an enumerable collection? Demonstrate an enumerator that you can be used to iterate over the elements in a collection with examples						CO7	L3
2		Implement an enumerator automatically by creating an iterator in C#. Explain.						CO7	L4
3		Explain how to provide additional iterators that can step through the elements of a collection in different sequences.						CO7	L2
4		Implementing the IEnumerable interface in c#						CO7	L4
5		Implement how to call a method through a delegate in c#.						CO7	L4
6		Explain how to create an instance of a delegate to refer to a specific method						CO7	L6
7		Implement how to call a method through a delegate in c#						**CO8**	L4
8		Define a lambda expression to specify the code to be executed by a delegate						CO8	L2
9		Explain how Declare an event field with examples						CO8	L2
10		Explain how to handle an event by using a delegate						CO8	L2
11		Explain how Declare an event field with examples.							

F. EXAM PREPARATION

1. University Model Question Paper

Course:	DOT NET FRAMEWORK					Month / Year	
Crs Code:	15CS564	Sem:	V	Marks:	80	Time:	180 minutes

-	Note	Answer all FIVE full questions.	Marks	CO	Level
1	a	What is Namespace? How namespace is used to solve name-clashing problem, Explainwith Example.	08	CO1	L2
	b	What is an assembly? Explain with Examples	05	CO1	L3
	c	Create a C# console application	07	CO1	L3
		OR			
2	a	Explain how the precedence and associativity of operators determine and howexpressions are evaluated in C#.	08	CO1	L2
	b	Describe Method overloading? Explain useful of method overloading with example	08	CO1	L3
	c	Explain how to use while, for, and do statements to execute code repeatedly while someBoolean condition is true with example.	04	CO1	L2
3	a	What is constructor? Explain necessity of overloading constructors with example.	08	CO2	L2
	b	Explain the differences between a value type and a reference type with example	06	CO2	L3
	c	Explain the purpose of encapsulation with example	06	CO2	L2
		OR			
4	a	What is boxing and unboxing? Explain with examples.	06	CO2	L2
	b	Explain how to control the accessibility of members by using the public and private keywords with examples.	08	CO2	L3
	c	Explain how to Declare, Create and use an enumeration type with Examples.	06	CO2	L2
5	a	Write a method that can accept any number of arguments by using the params keyword.	08	CO3	L3
	b	What is method overloading? Explain with example.	07	CO3	L2
	c	Explain how to create a derived class that inherits features from a base class withexample.	05	CO3	L2
		OR			
6	a	Explain how to implement an interface in a structure or class with examples.	08	CO4	L2
	b	Explain how to manage system resources by using garbage collection with example	06	CO4	L3
	c	Write code in c# that runs when an object is destroyed.	06	CO4	L2
7	a	What are properties? Explain how to create and use properties to provide controlled accessto data in an object with examples.	08	CO5	L2
	b	Explain how to create automatic properties and how to use properties when initializingobjects.	05	CO5	L2
	c	Explain how to control read access to properties by declaring get accessors with example.	07	CO5	L2
		OR			
8	a	Explain how to control read access to indexers by declaring get accessors with example.	05	CO6	L2
	b	Explain the differences between indexers and arrays with examples.	07	CO6	L2
	c	What are the problem with the object type? Explain the purpose of generics with examples.	08	CO6	L2
9	a	What exactly is an enumerable collection? Explain how to manually define anenumerator that you can use to iterate over the elements in a collection with examples.	08	CO7	L2
	b	Implement an enumerator automatically by creating an iterator in C#. Explain.	07	CO7	L4

	c	Implementing the IEnumerable interface in c#.	05	CO7	L4
		OR			
10	a	Explain how to create an instance of a delegate to refer to a specific method.	07	CO8	L3
	b	Implement how to call a method through a delegate in c#.	05	CO8	L2
	c	Explain how to handle an event by using a delegate.	08	CO8	L2

2. SEE Important Questions

Course:	DOT NET FRAMEWORK					Month / Year		
Crs Code:	15CS564	Sem:	V	Crs Code:	15CS564	Sem:	V	
	Note	Answer all FIVE full questions. All questions carry equal marks.				-	-	
Module	Qno.					**Marks**	**CO**	**Year**
1	1	What is Namespace? How namespace is used to solve name-clashing problem, Explain with Example.				10	CO1	2016
	2	What is an assembly? Explain with Examples				06	CO1	2016
	3	Explain how to create a blank universal windows platform app using visual studio 2015 with example.				04	CO1	2016
	4	Create a C# console application				09	CO1	2016
	5	Explain how the precedence and associativity of operators determine and how expressions are evaluated in C#.				10	CO1	2017
2	1	What is constructor? Explain necessity of overloading constructors with example.				4	CO2	2017
	2	Explain how arguments are passed as method parameters by using the ref and out keywords				10	CO2	2017
	3	Explain the differences between a value type and a reference type with example				10	CO2	2017
	4	Write and call your own constructors in C#. Explain how to create anonymous classes with examples.				05	CO2	2016
	5	Explain how to control the accessibility of members by using the public and privatekeywords with examples.				06	CO2	2015
3	1	Write a method that can accept any number of arguments by using the params keyword.				08	CO3	
	2	What is method overloading? Explain with example.				05	CO3	
	3	Explain how to create a derived class that inherits features from a base class with example.				07	CO3	2016
	4	Explain how to implement an interface in a structure or class with examples.				5	CO4	
	5	Write and call your own constructors in C#. Explain how to create anonymous classes with examples.				5	CO4	
4	1	Write a method that can accept any number of arguments by using the params keyword.				08	CO5	
	2	Explain the differences between methods that take parameter arrays and methods thattake optional parameters				05	CO6	
	3	What is method overloading? Explain with example.				07	CO5	
	4	Explain how to create a derived class that inherits features from a base class with example				08	CO6	
	5	.Write and call your own constructors in C#. Explain how to create anonymous classes with examples.				07	CO6	
5	1	Implement an enumerator automatically by creating an iterator in C#. Explain				08	CO7	2016
	2	Explain how to provide additional iterators that can step through the elements of a collection in different sequences.				07	CO7	2010
	3	Implementing the IEnumerable interface in c#.				05	CO8	
	4	Implement how to call a method through a delegate in c#.				07	CO8	2017
	5	Explain how to create an instance of a delegate to refer to a specific method.				05	CO8	2015