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P.E.S. College of Engineering, Mandya - 571 401
(An Autonomous Institution affiliated to VTU, Belagavi)
Third Semester, Master of Computer Applications (MCA)
Semester End Examination; February / March - 2022
Programming Using C# and .NET

Time: 3 hrs   Max. Marks: 100

Course Outcomes

The Students will be able to:

CO1: Describe the components of .NET technologies.

CO2: Apply the object-oriented concepts of C# for applications development.

CO3: Select relevant exception handling types to handle errors in applications.

CO4: Implement windows forms and process events in response to user interaction with GUI controls.

CO5: Create database driven ASP.NET web application and web services.

<u>*Note:*</u> *I) Answer any **FIVE** full questions, selecting **ONE** full question from each unit.*

*II) Any **THREE** units will have internal choice and remaining **TWO** unit questions are compulsory.*

III) Each unit carries 20 marks.

Q. No.	Questions	Marks	BLs	COs	POs
	UNIT - I				
1 a.	Explain the components of **.**NET framework with the help of architectural diagram.	10	L2	CO1	PO1,2
b.	Explain Metadata and Assemblies in C#.	10	L2	CO1	PO1,2
	OR				
1 d.	With an example program, illustrate boxing and unboxing in C#.	6	L2	CO1	PO1,2,3
e.	Discuss the following operators with example program;				
	i) ?? (Null coalescing operator)	10	L2	CO1	PO1,2,3
	ii) 'is' and 'as' operator				
f.	Write a short note on type conversion in nullable types.	4	L2	CO1	PO1,2
	UNIT - II				
2 a.	Briefly explain various formal parameters in C#.	12	L2	CO2	PO1,2,3
b.	What is the need of class in C#? Explain with an example program, the concept of creating array of objects.	8	L1,2	CO2	PO1,2,3
	OR				
2 d.	With a suitable example program, describe the usage of partial classes and partial methods in C#.	10	L2	CO2	PO1,2,3
e.	What are Properties? Briefly explain different types of properties in C#.	10	L1	CO2	PO1,2
	UNIT - III				
3 a.	How to enforce encapsulation by using accessors, mutators, and class properties? Illustrate with suitable example program.	10	L1,2	CO3	PO1,2
b.	Construct a program in C# to build a class which implements an interface.	10	L3	CO3	PO1,2,3

OR

3 d.	What is polymorphism? What are the different types of polymorphisms available in C#? Briefly explain the usage of virtual and override keywords with program example.	10	L1,2	CO3 PO1,2,3
e.	Explain the procedure to use delegates in C# with suitable example program.	10	L2	CO3 PO1,2

UNIT - IV

4 a.	Discuss the properties, events of checkbox and radio buttons.	10	L2	CO4 PO1,2
b.	Explain the following windows forms controls: i) Anchoring ii) Docking	10	L2	CO4 PO1,2

UNIT - V

5 a.	Explain ADO**.**NET architecture with a neat diagram.	10	L2	CO5 PO1,2
b.	Illustrate the steps for creating connection string in Microsoft SQL server.	10	L2	CO5 PO1,2

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