Basavarajeswari Group of Institutions

2024 SCHEME

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT

(Autonomous Institute under Visvesvaraya Technological University, Belagavi)

USN | | | | | | | | | | |

Course Code | M | M | C | 2 | 0 | 1 |

Second Semester MCA Degree Examinations, September 2025

DATA ANALYTICS USING PYTHON

Duration: 3 hrs **Max. Marks: 100**

Note: *1. Answer any* **FIVE** *full questions, choosing* **ONE** *full question from each module.*
2. Missing data, if any, may be suitably assumed

Q. No		*Question*	*Marks*	*(RBTL:CO: PI)*
		MODULE – 1		
1.	**a.**	**Explain** the concept of data and **classify** different types of data with suitable examples.	**10**	**(2:1:1.4.1)**
	b.	**Differentiate** between data analytics, data analysis, data science, and business analytics with definitions and examples.	**10**	**(2:1:3.6.2)**
		(OR)		
2.	**a.**	**Discuss** the role and significance of data visualization in decision-making contexts.	**10**	**(3:1:2.6.4)**
	b.	**Evaluate** the importance and evolution of data visualization dashboards in modern business applications.	**10**	**(3:1:3.6.2)**
		MODULE – 2		
3.	**a.**	**Explain** different control flow statements and **construct** programs using them.	**10**	**(2:2:1.4.1)**
	b.	**Write short notes** on variables, keywords, comments, statements and expressions, and indentation in Python.	**10**	**(2:2:2.6.4)**
		(OR)		
4.	**a.**	**Explain** the concepts of fruitful and void functions with examples.	**10**	**(2:3:1.4.1)**
	b.	**Illustrate** the use of global and local variables in a Python function with suitable examples.	**10**	**(3:2:3.6.2)**
		MODULE – 3		
5.	**a.**	**Demonstrate** various string methods in Python with examples.	**10**	**(3:2:2.6.4)**
	b.	**Illustrate** the usage of list methods like **append(), extend(), insert(), remove(), pop()** using examples.	**10**	**(3:3:3.6.2)**
		(OR)		
6.	**a.**	**Construct** a Python program demonstrating object-oriented concepts such as encapsulation, overloading, and inheritance.	**10**	**(3:3:3.6.2)**
	b.	**Explain** dictionary methods (**get(), keys(), items(), values())** with examples.	**10**	**(2:3:1.4.1)**
		MODULE – 4		
7.	**a.**	**Explain** different data types supported by NumPy and **demonstrate** how to define arrays using these data types.	**10**	**(2:4:2.6.4)**

Note: (**RBTL - Revised Bloom's Taxonomy Level: CO - Course Outcome: PI - Performance Indicator)**

	b.	**Compute** descriptive statistics (**mean, median, std deviation, etc**.) using Pandas.	**10**	**(3:4:1.4.1)**

(OR)

8.	**a.**	**Illustrate** the use of universal functions (ufuncs) in NumPy for array computations.	**10**	**(3:4:3.6.2)**
	b.	**Illustrate** methods to handle missing data in Pandas using suitable examples.	**10**	**(3:4:3.6.2)**

MODULE – 5

9.	**a.**	**Explain** the basic principles of Matplotlib and **construct** simple line and scatter plots.	**10**	**(3:5:1.4.1)**
	b.	**Customize** Seaborn plots using themes, palettes, and styling options.	**10**	**(3:5:2.6.2)**

(OR)

10.	**a.**	**Compare** different visualization techniques in Matplotlib and **justify** their use in appropriate scenarios.	**10**	**(3:5:2.6.1)**
	b.	**Explain** the features of Seaborn and **create** visualizations such as bar plots, box plots, and heat maps.	**10**	**(3:5:1.4.1)**

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