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22MCA31

Third Semester MCA Degree Examination, Dec.2023/Jan.2024
Data Analytics Using Python

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Describe the following with examples: i) Keywords ii) Data types iii) Statements iv) Expressions.	8	L2	CO1
	b.	Discuss on various types of operators with examples.	8	L2	CO1
	c.	Write a python program to check whether the given year is leap year or not.	4	L2	CO1
		OR			
Q.2	a.	Describe the for statement with an example.	5	L2	CO1
	b.	Write a python program to print the following pattern: 1 1 2 1 2 3 1 2 3 4 1 2 3 4 5	5	L2	CO1
	c.	What is function? Discuss on various types of functions with examples.	10	L2	CO1
		Module – 2			
Q.3	a.	Explain any five string methods with examples.	10	L3	CO2
	b.	Explain the concepts of sets and dictionary with examples.	6	L3	CO2
	c.	Illustrate the concepts of list slicing with examples.	4	L3	CO2
		OR			
Q.4	a.	Explain the following with an example program: i) Inheritance ii) Operator overloading.	10	L3	CO2
	b.	Illustrate the various modes of opening files with examples.	10	L3	CO2
		Module – 3			
Q.5	a.	Explain the following methods related to database with examples: i) create ii) insert iii) execute iv) fetchall	8	L3	CO3
	b.	How to handle missing values in python? Explain with examples.	6	L3	CO3
	c.	Explain the reading and writing data in text format in python.	6	L3	CO3

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		OR			
Q.6	**a.**	Explain the following merge methods: i) Outer ii) Left iii) Right	**10**	**L3**	**CO3**
	b.	Explore the following data transformation methods: i) Discretization and binning ii) Detecting and filtering outliers iii) Renaming axis indexes.	**10**	**L3**	**CO3**
		Module – 4			
Q.7	**a.**	What is Web scraping? Explain the various methods available in requests module with an example program.	**10**	**L3**	**CO3**
	b.	Discuss the implementation of web scraping in python with beautiful soup.	**10**	**L3**	**CO3**
		OR			
Q.8	**a.**	Explain the attributes of arrays in numpy with examples.	**10**	**L3**	**CO3**
	b.	Write a python program to demonstrate the following operations using numpy array: i) Array searching ii) Sorting iii) Splitting iv) Broadcasting v) Concatenation	**10**	**L3**	**CO3**
		Module – 5			
Q.9	**a.**	Describe the concepts of matplotlib package in detail.	**10**	**L4**	**CO4**
	b.	Write a python program for visualization of lineplot, histogram and scatter plot using matplotlib package.	**10**	**L4**	**CO4**
		OR			
Q.10	**a.**	Explain the concepts of seaborn package in detail.	**10**	**L4**	**CO4**
	b.	Explain the concepts of time series analysis with pandas.	**10**	**L4**	**CO4**

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