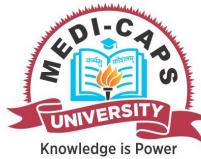


Enrollment No.....



Duration: 3 Hrs

Programme: B.Tech.

Branch/Specialisation: EE

Faculty of Engineering
1 Sem Examination Dec 2024
BES04 Data Analysis with Python

Duration: 3 Hrs.

Maximum Marks: 60

Maximum Marks: 60

Note: All questions

Internal choices, if any, are indicated. Answers of

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

	[2]		[3]
vi.	Which operation splits an array horizontally into equal parts? (a) np.split() (b) np.hsplit() (c) np.vsplit() (d) np.array_split()	1 02 01, 02 05 02 01, 02 03, 04	OR iii. Compare and contrast structured and unstructured data. Provide examples and explain their significance in data analysis.
vii.	Which method can be used to remove missing values from a list? (a) remove() (b) filter() (c) del() (d) append()	1 02 01, 02 05 02 01, 02 03, 04	Q.4 i. What is the significance of statistical operations like mean, median, and std in NumPy?
viii.	What operation merges two lists of the same size to form a dictionary? (a) zip() (b) map() (c) append() (d) filter()	1 01 01, 05 01 01, 02 03, 04	ii. Discuss the concept of shape manipulation in NumPy with examples of reshaping, stacking, and splitting arrays.
ix.	Which library is most used for creating bar graphs in Python? (a) Seaborn (b) NumPy (c) Matplotlib (d) Pandas	1 01 01, 05 01 01, 02 03, 04	OR iii. Write a Python program to split a list into equal-sized dataset and provide an explanation of how the splitting works.
x.	Which plot is used to visualize the distribution of a single variable? (a) Scatter plot (b) Box plot (c) Bar graph (d) Histogram	1 01 01, 05 01 01, 02 03, 04	Q.5 i. How can you find and handle missing values in a Python list manually? Provide an example.
			ii. Discuss how nested loops can be used to simulate operations like "stacking" and "splitting" for data stored in a list of lists.
			OR iii. What are the basic arithmetic operations supported by Data Frames? Explain how they work with an example involving two Data Frames.
Q.2	i. How to use the various types of functions in python? ii. Differentiate between break, continue, and pass statements in Python with examples. iii. Explain the key features of Python's data structures: lists, dictionaries, sets, and tuples. Provide a use case for each.	2 02 01, 02 05 02 01, 02 03, 04	Q.6
	iv. Discuss the significance of exception handling in Python. Write a code snippet to handle multiple exceptions effectively.	5 04 01, 02 05 04 01, 02 03, 04	i. Attempt any two: Describe the steps involved in creating a bar graph using Matplotlib. Include a code example.
			ii. Describe how pie charts are used to represent data and mention their limitations.
			iii. Explain the importance of exploratory data analysis (EDA) in understanding a dataset.
Q.3	i. List two techniques to export data after analysis. ii. Describe the process of importing and exporting datasets. Include common file formats and tools used in this process.	2 01 01, 05 01 01, 02 03, 04	*****
		8 03 01, 02 05 03 01, 02 03, 04	

Marking Scheme

EE3ES04 (T) Data Analysis With Python (T)

Q.1					Q.4				
	i)	(a) continue		1		i.	What is the significance of statistical operations like mean, median, and std in NumPy?		3
	ii)	(c) elif		1		ii.	Each statistical operations	-1 mark	
	iii)	(c) MP4		1		OR	Concept of shape manipulation	-4 marks	7
	iv)	(b) Median		1		iii.	Example of each array	-3 marks	
	v)	(a) array()		1			Program to split dataset	-3 marks	7
	vi)	(b) np.hsplit()		1			Explanation of how the splitting	-4 marks	
	vii)	(b) filter()		1					
	viii)	(a) zip()		1					
	ix)	(c) Matplotlib		1					
	x)	(d) Histogram		1					
Q.2					Q.5				
	i.	Name of various type of function		-1 mark	2	i.	Explanation to find and handle missing values	-3 marks	4
		Use with example		-1 mark		ii.	Example	-1 mark	
	ii.	Each difference (1*3)		-3 marks	3		Stacking	-3 marks	6
	iii.	key features of Python's data structures		-3 marks	5		Splitting	-3 marks	
		use of each case program				OR	Discuss about basic arithmetic operations	-3 marks	6
OR	iv.	Significance of exception handling		-3 marks	5	iii.	Example involving two DataFrames	-3 marks	
		Programming code							
Q.3					Q.6				
	i.	Name of techniques		-2 marks	2		Attempt any two:		
	ii.	Process of importing and exporting datasets		-6 marks	8	i.	Steps involved in creating a bar graph	-3 marks	5
		Uses of common file formats and tools		-2 marks		ii.	Code example	-2 marks	
OR	iii.	Comparison		-5 marks	8		Pie charts are used to represent data	-3 marks	5
		Example with their significance					Limitations	-2 marks	
							Importance of exploratory data analysis	-4 marks	5
							Code example	-1 mark	
