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Question Paper Code: 22MCAP112

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS INSTITUTION)

**MCA II Year I Semester (R22) Supplementary End Semester Examinations –
December 2025**

FUNDAMENTALS OF DATA SCIENCE

Time: 3Hrs

Max Marks: 60

Attempt all the questions. All parts of the question must be answered in one place only.

In Q.no 1 to 5 answer either A or B only

Q.No	Question	Marks	CO	BL
Q.1(A)	Briefly explain the steps in data science process with diagram	12M	1	2
OR				
Q.1(B)	Define outliers. How to Handle missing data and outliers using python? Explain with example.	12M	1	3
Q.2(A)	Explain data aggregation and summarization process using pandas and NumPy with a suitable example	12M	2	2
OR				
Q.2(B)	Explain hierarchical clustering algorithm with an example.	12M	2	2
Q.3(A)	How to handle missing data and duplicates in dataset using python libraries.	12M	3	3
OR				
Q.3(B)	Explain how to Deal with data inconsistencies and conflicts using python libraries.	12M	3	3
Q.4(A)	Explain different visualization tools in detail with an example.	12M	4	2
OR				
Q.4(B)	How to create geospatial visualization using GeoPandas library discuss with relevant python code.	12M	4	3
Q.5(A)	Describe Natural Language Processing. Explain the its preprocessing steps in details.	12M	5	3
OR				
Q.5(B)	Explain AR(p),MA(q) and ARIMA(p,d,q) models with example	12M	5	3

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