Code No.: R22AI623PE

R22	H.T.No.			8	R					

CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
III–B.TECH–II–Semester End Examinations (Supply) - December- 2025
INTRODUCTION TO DATA SCIENCE
(CSM)

[Time: 3 Hours] **[Max. Marks: 60]**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 10 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A **(10 Marks)**

1. a)	How does Data Science differ from traditional data analysis?	[1M]
b)	List the basic data types available in R.	[1M]
c)	Name any two graphical methods used to represent statistical data.	[1M]
d)	Differentiate between categorical and continuous attributes.	[1M]
e)	What is the purpose of naming vector elements?	[1M]
f)	How do you name the elements of a list?	[1M]
g)	What is the difference between & and && in R?	[1M]
h)	What is the syntax of a while loop in R?	[1M]]
i)	What is a wavelet transform?	[1M]
j)	Give an example tool used for visualizing complex relations.	[1M]

PART-B **(50 Marks)**

2.	Discuss the key components and processes involved in a typical Data Science workflow.	[10M]
	OR	
3.	Explain different sampling techniques and their significance in Data Science.	[10M]
4.	Discuss the different levels of measurement associated with attributes.	[10M]
	OR	
5.	Describe how histograms, box plots, and scatter plots can be used to visualize statistical descriptions of data.	[10M]
6.	Explain the various methods of subsetting a vector in R with examples.	[10M]
	OR	
7.	Discuss merging techniques when list elements are of different lengths or types.	[10M]
8.	Explain the use of if, if-else, and ifelse() statements in R with examples.	[10M]
	OR	
9.	Demonstrate how to write a recursive function in R to calculate the factorial of a number.	[10M]
10.	Describe various techniques for attribute subset selection in data preprocessing.	[10M]
	OR	
11.	Explain the concept of data cube aggregation with suitable examples.	[10M]

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