



# ACE Engineering College

(An Autonomous Institution)

Question Paper Code:

CD502PC/CM512PE

ACE-R20

## III B. Tech- I Semester Supplementary Examination - JULY -2023

### INTRODUCTION TO DATA SCIENCE

#### Common to CSM & CSD

Time: 3 Hours

Max. Marks: 70

H. T. No										

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 20 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

MARKS: 10\*2=20

Q.No: 1

Question

Marks

- |    |  |   |
|----|--|---|
| a) | Describe how to fit a model.   | 2 |
| b) | Write the output for the following code:<br>v <- 23.5<br>print(class(v))<br><br>v <- 2L<br>print(class(v))<br><br>v <- charToRaw("Hello")<br>print(class(v))<br><br>v <- "TRUE"<br>print(class(v)) | 2 |
| c) | What is an attribute?  | 2 |
| d) | Differentiate continuous and discrete variables.   | 2 |
| e) | Describe two ways of naming elements in a vector.  | 2 |
| f) | Write R-code for matrix addition.  | 2 |
| g) | Write if-else statement with example.  | 2 |
| h) | Find the minimum and maximum for 140, 230, 160, 200, 0, -170, 1000. Using R code.  | 2 |
| i) | Define dimensionality reduction.   | 2 |
| j) | What is data cube aggregation?   | 2 |

## PART- B

MARKS: 5\*10=50

Q.No	Question Description	Marks
2.	Briefly explain different probability distributions with simple graphs.	10
	(OR)	
3	Discuss about populations and Samples with respect to Big Data.	10
4	What is central tendency? Explain various ways to measure the central tendency with examples.	10
	(OR)	
5.	Discuss about Range, Quartiles and IQR in detail with examples.	10
6	What is a factor? Explain the factor levels and ordered factors with examples.	10
	(OR)	
7	Differentiate vectors and matrices. Explain naming matrices and matrix subsetting.	10
8	Explain control statements in R with examples.	10
	(OR)	
9	Explain relational operators and vectors, logical operators and vectors with examples.	10
10	Briefly explain Hierarchical Visualization Techniques and Visualizing Complex Data and Relations	10
	(OR)	
11	Explain Principal Components Analysis in detail.	10