

M. TECH. (CSE/DS) Examination, 2025
Paper Code: MTCSE PE 121/MTDS PE111

Data Science

Maximum Marks: 60

(Write your roll number at the top immediately on receipt of question paper)

SECTION A

*Attempt **ALL** questions. Each carries equal marks.*

(4 x 5= 20 marks)

1	Illustrate a scenario where: i. Supervised learning gives better results when compared to unsupervised learning. ii. Unsupervised learning gives better results when compared to supervised learning.	CO3, BL 6
2	Explain the various types of data collection techniques in recent times	CO6, BL3
3	What are the various sources of data? Are there any issues related to collecting data from multiple sources?	CO2, BL 3
4	Give your views on the statement "Data Science is an evolutionary extension of statistics capable of dealing with the massive amounts of data produced today".	CO1, BL 5

SECTION B

*Attempt **FOUR** questions. Each carries equal marks.*

(4 x 10=40 marks)

1	The blood pressures, p mmHg, and the ages, t years, of 7 hospital patients are shown in the table below: <table><tr><td>Patient</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td></tr><tr><td>t</td><td>42</td><td>74</td><td>48</td><td>35</td><td>56</td><td>26</td><td>60</td></tr><tr><td>p</td><td>98</td><td>130</td><td>120</td><td>88</td><td>182</td><td>80</td><td>135</td></tr></table> i. Find the equation of the regression line of p on t. ii. Use the model to find the blood pressure of a patient with age 40. Also, check the fitness of the model.	Patient	A	B	C	D	E	F	G	t	42	74	48	35	56	26	60	p	98	130	120	88	182	80	135	CO3, BL 4
Patient	A	B	C	D	E	F	G																			
t	42	74	48	35	56	26	60																			
p	98	130	120	88	182	80	135																			
2	Draw the DIKW diagram and explain each in detail.	CO1, BL 3																								
3	What role does data visualisation play in Data Science. Explain any four retinal variables with examples.	CO4, BL3																								
4	Discuss the various types of regression techniques and thus explain the scenario where each regression technique can be used.	CO3, BL 3																								
5	Explain the Data Science applications in real life in detail.	CO5, BL 3																								
6	Differentiate between Data Science and Machine Learning. Explain the Data Science Life cycle with an example.	CO1, BL 2																								