Semester VIII (B.Tech)

Er. No.....

Academic Year: 2023-24

Jaypee University of Engineering & Technology, Guna

End Term Examination VIII Semester-Project At Industry (2024)

18B14CI763 – BIG DATA ANALYTICS

Maximum Duration: 2 Hours

Maximum Marks: 45

Notes:

1. This question paper has nine questions.
2. Write relevant answers only.
3. Do not write anything on question paper (Except your Er. No.).
4. Use of graph paper is permitted in the exam hall.

		Marks	CO No.
Q1.	In a sample of five measurements, the diameter of a sphere was recorded by a scientist as 6.33, 6.37, 6.36, 6.32, and 6.37 centimeters (cm). Determine unbiased and efficient estimates of (a) the true mean and (b) the true variance.	**[05]**	**CO2**
Q2.	Find the coefficient of linear correlation between the variables X and Y presented in table given below.	**[05]**	**CO3**

X	*1*	*3*	*4*	*6*	*8*	*9*	*11*	*14*
Y	*1*	*2*	*4*	*4*	*5*	*7*	*8*	*9*

Q3.	Table below shows the respective heights X and Y of a sample of 12 fathers and their oldest son. (a) Construct a scatter diagram of the data. (b) Find the least-squares regression line of the height of the father on the height of the son by solving the normal equations.										**[05]**	**CO2**

X(in)	65	63	67	64	68	62	70	66	68	67	69	71
Y(in)	68	66	68	65	69	66	68	65	71	67	68	70

Q4.	Briefly explain Ridge regression, also, highlight the role of Bias and Variance trade-off.	**[05]**	**CO3**
Q5.	How does KNN algorithm works, what are its advantages and limitations?	**[05]**	**CO4**
Q6.	Explain, what is Support Vector Machines (SVM), also, define what are support vectors in SVM?	**[05]**	**CO4**

Q7	In the parlance of Machine Learning, what do you understand by Logistic regression? Briefly explain various types of Logistic regression.	**[05]**	**CO4**
Q8	Explain the terms (a) Null Hypothesis and (b) Alternative Hypothesis. Also, explain significance and test of hypothesis, or decision rules.	**[05]**	**CO3**
Q9.	With the help of suitable example, briefly explain what is LASSO regression.	**[05]**	**CO3**