

**4E1231**

Roll No.

Total No of Pages: **3****4E1231****B. Tech. IV - Sem. (Main) Exam., May - 2019****BSC Automobile Engineering****4AE2 - 01 Data Analytics****AE, ME****Maximum Marks: 80****Time: 2 Hours**[ersahilkagyan.com](http://ersahilkagyan.com)**Instructions to Candidates:**

*Attempt all five questions from Part A, four questions out of six questions from Part B and two questions out of three from Part C.*

*Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

*Use of following supporting material is permitted during examination.  
(Mentioned in form No. 205)*

1. NIL2. NIL**PART - A****(Answer should be given up to 25 words only)****[5×2=10]****All questions are compulsory**

Q.1 Define Homoscedasticity and Heteroscedasticity. [2]

Q.2 What is residual in multivariate analysis? [2]

Q.3 What is ANOVA? [2]

Q.4 Write a short note on cluster analysis. [2]

Q.5 "The analysis of time series is done to understand the dynamic conditions for achieving the short term and long term goals of business firms." Discuss. [2]

## PART - B

(Analytical/Problem solving questions)

[4×10=40]

Attempt any four questions

- Q.1 Discuss the objectives and scope of data analytics in the industry. [10]
- Q.2 How would you differentiate among multiple discriminant analysis, regression analysis and logistic regression analysis? [10]
- Q.3 Find the multiple linear regression equation of  $X_1$ ,  $X_2$  and  $X_3$  from data relating of three variables given below - [10]

$X_1$	4	6	7	9	13	15
$X_2$	15	12	8	6	4	3
$X_3$	30	24	20	14	10	4

- Q.4 Write a brief essay on "Factor analysis". [10]
- Q.5 What do you understand by ARIMA model in time series data analysis? [10]
- Q.6 Explain briefly MANOVA and MANCOVA. [10]

## PART - C

(Descriptive/Analytical/Problem Solving/Design Questions)

[2×15=30]

Attempt any two questions

Q.1 Write a short note on (any three) -

- (a) Missing data [5]
- (b) Rotation [5]
- (c) Conjoint Analysis [5]
- (d) Outliers [5]

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Q.2 Differentiate between CHAID and CART. How CHAID is better than CART? [10+5=15]

Q.3 The following table gives the average monthly sale of 4 salesman in three different types of territories: [15]

Territory	Salesman				Total
	A	B	C	D	
X	5	4	4	7	20
Y	7	8	5	4	24
Z	9	6	6	7	28
Total	21	18	15	18	72

Carry out a two way analysis of variance table from the above facts and interpret the result.

The 5% value of F for (3, 6) and (2, 6) degree of freedom are 4.76 and 5.14 respectively.

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