ASSIGNMENT

Q1. Explain clearly the concept of prediction and prediction error in the case of Individual as well as mean prediction. Is linear predictor unbiased?

Q2. In the case of classical General Linear Model with K explanatory variables, how would you obtain confidence interval for mean prediction under the given significance level?

Q3. Explain the concept of multicollinearity giving an illustration. What do you understand by perfect and strong but Less than perfect multicollinearity?

Q4. How would you detect multicollinearity in linear models?

Q5. What is auxilliary regression? Explain how it can be useful in detecting the presence of Multicollinearity.

Q6. Explain the terms (a) Condition Index (b) variance Inflation Factor (c) Tolerance

How they can be useful in detecting multicollinearity in Linear Models?

Q7. Enumerate different methods for resolving the deadlock due to multicollinearity.

Q8. Write brief notes on the following for solving the problem of multicollinearity (a) A priori information (b) Transformation of variables (c) Ridge Regression (d) Klein's Eigen value approach

Q9. (savings) = $\beta_1 + \beta_2(Income) + \beta_3(Wealth) + U$

It is found that about 30% of wealth generates income resulting in increase in savings. How can you tackle such a problem?

Q10. In trivariate regression model suppose that all zero – order correlation coefficients are equal to r, what will be the multiple coefficient of determination?

$$\left(\text{Ans.} \ R^2 = \frac{2r^2}{(1+r)}\right)$$