

Sardar Patel University
External Examination
M.Sc. Statistics/M.Sc. Applied Statistics Semester IV
PS04ESTA01 /PS04ESTA21/PS04EAST22:Econometrics
March 23, 2019, Saturday

Time: 02:00 p.m. to 05:00 p.m.

Marks:70

08

Q1. Multiple Choice Questions.

1. _____ residual is also known as deleted residual.

(a) Studentize	(b) R-student
(c) PRESS	(d) Standardize
2. _____ criteria is suitable when regression model is nested in nature.

(a) R^2	(b) $adj R^2$
(c) AIC	(d) All of them
3. The value of condition number is greater than 100 and less than 1000, we say that _____ type of Multicollinearity is present in data.

(a) Moderate	(b) Low
(c) Severe	(d) Perfect
4. In context to dummy variable regression, suppose we have 3 sources and 2 regressors in the model, how many dummy variables are to be introduced if intercept as well as slope parameters changes across the sources?

(a) 6	(b) 3
(c) 2	(d) 4
5. If the assumption of Classical Linear Regression Model errors are independently distributed is violated then the problem of _____ may arise in the model.

(a) Autocorrelation	(b) Multicollinearity
(c) Heteroscedasticity	(d) None of them
6. _____ test is useful to detect Heteroscedasticity in data.

(a) Chow Test	(b) Durbin Watson -d test
(c) Both (a) and (b)	(d) Hausman
7. If Durbin Watson d is near to zero we suspect presence of _____.

(a) Exogeneity	(b) Multicollinearity
(c) Model misspecification	(d) Heteroscedasticity
8. In recursive system of equations, _____ estimation method is preferable.

(a) ILS	(b) OLS
(c) GLS	(d) 2SLS

Q2. Short Answer Type Question (Any Seven)

14

1. Write brief on Mallow's C_p statistic.
2. Define Durbin Watson d- statistic. Further, give its application.
3. Write the test statistic of Chow Test. Further, give its application.
4. With respect to system of simultaneous equations, write the order condition about identification of system or equation.

5. Define Ridge estimator. Further give its mean and variance.
6. Write brief on test of model misspecification.
7. What do you mean by influential point? How will you detect it in regression analysis?
8. Distinguish between mathematical model and econometric model using an example.
9. Write brief on White General Test of Heteroscedasticity.
- Q3 (a) Discuss constraint least squares method. 06
- (b) Explain Goldberger point predictor in details. 06
- [OR]
- (b) Define Heteroscedasticity. Also explain remedial measure of Heteroscedasticity. 06
- Q4 (a) Explain the following: 06
- (1) ARCH Model.
- (2) Define autocorrelation. Write reasons for autocorrelation. Further, list the steps to detect it.
- (b) What are our observations for OLS estimators under the presence of Heteroscedasticity? Justify. 06
- [OR]
- (b) What happens to OLS estimators under the presence of autocorrelation? Explain. 06
- Q5(a) In context to regression analysis, explain residuals used for detecting outliers in data. 06
- (b) Explain remedial measure of Multicollinearity. 06
- [OR]
- (b) Explain dummy variable regression model in details. 06
- Q6(a) With reference to system of simultaneous equations, in usual notation show that the OLS estimators are inconsistent and biased. 06
- (b) In context of system of simultaneous equations, state and prove rank condition. Further give an example of it. 06
- [OR]
- (b) Discuss briefly with an example system of simultaneous equations. Further, write on test of Exogeneity. 06

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