

RPN – 08

M.Com. (Semester – III) (Acct. & Fin.) Examination, November 2017
COO3A1 : ECONOMETRICS FOR FINANCE (OA – 18)

Duration : 3 Hours

Max. Marks : 60

- Instructions:** 1) This paper consists of **nine** questions carrying **equal** marks.
2) Question No. 1 consists of **5 compulsory** questions of **2 marks each**.
3) Answer **any 5** questions from question **2, 3, 4, 5, 6, 7, 8 and 9**.
4) **Each** question carries **10** marks. Figures to the **right** indicate marks.

1. Answer the following short questions in brief : (5×2=10)
- a) What is meant by Coefficient of Determination (r^2) ?
 - b) State any four remedial measures to correct the problem of Multicollinearity.
 - c) State the null and alternative hypothesis under the F-test.
 - d) What is meant by stationary stochastic process ?
 - e) What do you understand by Qualitative Response Regression Models ?
2. Discuss the assumptions of Classical Linear Regression Model. 10
3. Define Serial Correlation. Explain the several reasons for presence of autocorrelation in regression models. 10
4. Explain the types of Model Specification errors. 10
5. a) From a study of cointegration between four international bond markets namely Germany, Japan, United Kingdom and the United States, the results of Johansen tests are provided below.

r (number of cointegrating vectors under the stated hypothesis)	Test Statistics	Critical value (5 percent)
0	39.06	38.6
1	10.58	23.8
2	2.52	12.0
3	0.12	4.2

P.T.O.



State the alternative hypothesis in the Johansen's Cointegration test and comment on the number of cointegrating equations in the model. 4

b) Explain the concept of overall significance of the sample regression. 6

6. a) "ARCH models measure the volatility in financial time series". Elaborate. 5

b) Consider the following ARCH(1) model based on monthly Nifty Returns for a period 10 years and make the necessary interpretations.

$$\widehat{u}_t^2 = 0.000005 + 0.35216 \widehat{u}_{t-1}^2$$

$$t = (0.000) \quad (5.52)$$

$$R^2 = 0.0721 \quad d = 1.9896 \quad t_{0.05}(120 \text{ df}) = 1.980 \quad 5$$

7. a) What is meant by a Fixed Effects Model (FEM)? 2

b) Explain the framework of FEM with suitable example. 8

8. From the data for 46 cities in India for 1994, the following regression results were obtained.

$$\widehat{\log C} = 4.30 - 1.34 \log P + 0.17 \log Y$$

$$se = (0.91) \quad (0.32) \quad (0.20)$$

$$Adj R^2 = 0.27 \quad F\text{-stat} = 6.89$$

$$P\text{-value}(F) = 0.0432 \quad t_{0.05}(46 \text{ df}) = 2.021$$

Where C = cigarette consumption, packs per year

P = real price per pack

Y = real disposable income per capita.

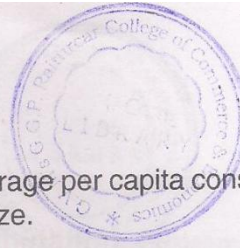
a) Interpret the preceding regression taking into account any prior expectations about signs of the various coefficients.

b) What is the elasticity of demand for cigarettes with respect to price? Is it statistically significant?

c) What is the income elasticity of demand for cigarettes? Is it statistically significant?

d) Interpret coefficient of determination.

e) Test the overall significance of the model. 10



9. The following regression output highlights the average per capita consumption expenditure in relation to Region and Household size.

$$\hat{Y}_i = 2454.72 - 16.06D_{2i} + 314.02D_{3i} - 344.72X_i$$

$$se = (505.33) (145.22) (165.64) (126.49)$$

$$R^2 = 0.5192 \quad t_{0.05}(13 \text{ df}) = 2.160$$

where, Y_i = Average consumption expenditure (Rs.) per person per 30 days in state i

X_i = Average household size (number of persons) in state i .

D_{2i} = 1 if the state is in the Eastern region of India, 0 otherwise

D_{3i} = 1 if the state is in the north-west-central region of the country, 0 otherwise.

- a) Identify the benchmark category in the regression.
- b) Make the necessary interpretations.

10

