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85C (BE)

[18–HRGPKAC–M3S]

MA 3rd Semester Exam., 2018

ECONOMICS

[MEC/MAEC (S3) 11]

(Basic Econometrics)

Full Marks : 80

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. Answer any *five* from the following questions : 2×5=10

(a) What is meant by econometrics?

(b) Define non-sampling errors.

(c) Mention the difference between null hypothesis and alternative hypothesis.

(d) Write any two applications of *t*-test.

(e) Suppose, $Y = f(X_1, X_2)$ and the functional relationship is linear, then form the multiple regression model.

(f) Define autocorrelations.

2. Answer any *three* from the following questions : 4×3=12

(a) Mention the essential steps that involved in testing a statistical hypothesis.

(b) Explain the properties of chi-square distribution.

(c) Explain stationary and non-stationary time series.

(d) Distinguish between endogenous and exogenous variables.

3. Answer any *three* from the following questions : 6×3=18

(a) Explain the desirable properties of a good estimator.

(b) A sample of 64 farm labourers engaged in paddy harvesting shows an average monthly wage rate of ₹ 200 with a standard deviation of ₹ 9. Using 0·05 level of significance, verify if the sample result indicates that their current average monthly wage rate is higher than ₹ 198.

(c) What are the assumptions underlying the method of least square in the classical linear regression model? Explain with the help of a two-variable linear regression model.

(d) Write short notes on the following : 3×2=6

(i) Point and interval prediction

(ii) Type I and Type II errors

4. Answer any *four* from the following questions : 10×4=40

(a) Answer the following questions for a linear regression model $Y_t = \alpha + \beta X_t + U_t$.

(i) Explain the nature of the random variable U_t.

(ii) What is its role in estimating regression parameters of a linear regression model?

(iii) Give interpretations of the parameters α and β.

(iv) What will be the nature of regression line if the value of intercept is zero? 2+3+3+2=10

(b) What does coefficient of determination signify? Explain the impact of the inclusion of irrelevant variables in a linear regression model. 5+5=10

(c) What are the components of time series? Explain the techniques of moving average method of fitting of trend. 5+5=10

(d) What is meant by multicollinearity problem in regression analysis? Explain the possible remedies of this problem. 5+5=10

(e) What are qualitative factors? How are dummy variables used for capturing the effect of qualitative factors? 3+7=10

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