

2018/EVEN/SEM/ECOH-602 (A/B)/305

TDC Even Semester Exam., 2018

ECONOMICS

(Honours)

(6th Semester)

Course No. : ECOH-602

Full Marks : 50

Pass Marks : 17

Time : 2 hours

*The figures in the margin indicate full marks
for the questions*

Candidates have to answer either Option—A
or Option—B

(For Arts Students)

OPTION—A

Course No. : ECOH-602 (A)

(STATISTICS FOR ECONOMICS—II)

Answer **five** questions, selecting **one** from each Unit

UNIT—I

1. (a) Distinguish between wholesale price index number and consumer price index number.

4

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(Turn Over)

- (b) Compute index number for 2012 taking 2010 as base year by using (i) simple aggregative method and (ii) simple average of price relatives : 3+3=6

<i>Commodities</i>	:	A	B	C	D	E
<i>Prices in 2010</i>	:	15	22	38	25	50
<i>Prices in 2012</i>	:	30	25	57	35	63

2. (a) What are the various difficulties involved in the construction of index number? 5
- (b) From the data below, calculate index number by Fisher's ideal method : 5

<i>Commodity</i>	<i>Prices in base year</i>	<i>Quantity in base year</i>	<i>Prices in current year</i>	<i>Quantity in current year</i>
A	1	2	7	11
B	2	4	8	12
C	3	5	9	13
D	4	6	10	14

UNIT—II

3. (a) What is time series? 2
- (b) How can time series analysis be helpful to the economists? 3

- (c) Which component of time series is applicable in the following cases? $1 \times 5 = 5$
- (i) Demand for sweaters
 - (ii) Decrease in death rate due to advancement of medical research
 - (iii) Increase in literacy rate in a developing country
 - (iv) Price of vegetables
 - (v) Price of shares in the share market

4. (a) Explain the method of moving averages for measuring trend. 2
- (b) Discuss its role in the isolation of trend and in smoothing time series data. 8

UNIT—III

5. (a) Explain the basic principles of sample survey. 5
- (b) What are the advantages of sampling over complete enumeration? 5
6. (a) What is sampling bias? Explain. 4
- (b) What are the advantages of stratified sampling over simple random sampling? Discuss. 6

UNIT—IV

7. (a) Differentiate between the following : 5

(i) Parameter and Statistic

(ii) Point estimate and Interval estimate

(b) A random sample of size 10 was drawn from a normal population with an unknown mean and a variance of 44.1 (inch)². If the observations are (in inches)—65, 71, 80, 76, 78, 82, 68, 72, 65 and 81, obtain 95% confidence interval for population mean. 5

8. (a) The mean height obtained from a random sample of size 100 is 64 inches. The standard deviation of the distribution of height of the population is known to be 3 inches. Find 99% confidence interval for mean height of the population. 5

(b) Write a note on standard normal distribution. 5

UNIT—V

9. (a) Explain the following concepts : 3+3=6

(i) Null hypothesis and alternative hypothesis

(ii) Type I error and type II error

(5)

- (b) What are the uses of Chi-square test? 4
10. (a) Write a note on level of significance. 5
- (b) A random sample of size 20 from a normal population gives a sample mean of 42 and sample standard deviation of 6. Test the hypothesis that the population mean is 44.
[Given : $t_{0.025} = 2.09$ and $t_{0.005} = 2.86$ for 19 d.f. at 5% level of significance] 5

(For Science Students)

OPTION—B

Course No. : ECOH-602 (B)

(ELEMENTS OF ECONOMETRICS—II)

Answer **five** questions, selecting **one** from each Unit

UNIT—I

1. (a) State whether the following statements are True or False with proper justification : 2+2=4
- (i) Assumption of 'No multicollinearity' means the correlation between the regressand and regressor is zero.

- (ii) High R^2 value with a few or no significant t value is a symptom of multicollinearity.
- (b) How can variance inflation factor be used as a method for detecting multicollinearity? Discuss with the help of a suitable example. 6
2. (a) State whether the following statements are True or False with proper justification : 2+2=4
- (i) In case of high but imperfect multicollinearity, the regression coefficients remain indeterminate.
- (ii) Multicollinearity is not a serious problem if the objective of regression analysis is only prediction and not the precise estimation of the regression coefficients.
- (b) Discuss any three important remedial measures of multicollinearity. 2×3=6

UNIT—II

3. (a) What is heteroscedasticity? 2
- (b) Discuss various remedial measures of heteroscedasticity. 8

4. (a) Distinguish between autocorrelation and serial correlation. 2
- (b) How can Durbin-Watson d -statistic be used as a method for detecting autocorrelation? Discuss elaborately. 8

UNIT—III

5. (a) What is a dummy variable? 2
- (b) Distinguish between slope dummy and intercept dummy with the help of a suitable regression model. 4
- (c) Discuss the utility of interaction dummy in an econometric analysis. 4
6. (a) State whether the following statements are True or False with proper justification : 2+2=4
- (i) If a qualitative variable has m categories, then we can introduce only m dummy variables.
- (ii) Regression models containing a combination of quantitative and qualitative variables are called analysis of variance (ANOVA) models.
- (b) Discuss the advantages and disadvantages of dummy variables. 6

UNIT—IV

7. (a) What is time series? 2
- (b) Distinguish between seasonal and cyclical variations of time series. 4
- (c) Which component of time series is mainly applicable in the following cases? 4
- (i) Demand for cold drinks
 - (ii) Decrease in the death rate due to advancement of medical science
 - (iii) The increase of literacy rate in a developing country
 - (iv) Prices of agricultural commodities
8. (a) Discuss different types of trend in a time series. 4
- (b) Add a note on the importance of time series study in economics. 6

UNIT—V

9. Discuss the measurement of trend by the method of least squares. Point out the merits and demerits of least square method in measuring the trend of a time series. 6+4=10

10. (a) Discuss moving average method for measuring the trend of a time series. 5
- (b) Calculate 3 yearly moving averages from the following time series data : 5

<i>Year</i>	<i>Production ('000 ton)</i>
1970	12
1971	14
1972	16
1973	13
1974	16
1975	19
1976	20
1977	22
1978	23
1979	21
1980	24

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