

**2017/SEM/EVEN/ECOH-602  
(A/B)/209**

**TDC Even Semester Exam., 2017**

**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*

Arts Students should answer from ECOH-602 (A)  
and Science Students from ECOH-602 (B)

**( For Arts Students )**

**Course No. : ECOH-602 (A)**

**( Statistics for Economics—II )**

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

**UNIT—I**

1. (a) What are the steps involved in the construction of an index number? 6
- (b) What are the uses of index numbers? 4



2. (a) What is the importance of weights in the construction of a price index number? 4
- (b) Using the following data, show that Fisher's index number satisfies :  $3+3=6$
- (i) Time Reversal Test
- (ii) Factor Reversal Test

Commodity	Base Year		Current Year	
	$P_0$	$Q_0$	$P_1$	$Q_1$
A	10	40	12	45
B	11	50	11	52
C	14	30	17	30
D	8	28	10	29
E	12	15	13	20

## UNIT—II

3. (a) What do you mean by secular trend? 3
- (b) The following table shows the production (in '000 metric tonnes) of a commodity in different years :

Year	Production (in '000 Mt)
2005	469
2006	568
2007	679
2008	685
2009	689
2010	804

Fit a linear trend to the above data and interpret the result.



4. (a) Distinguish between seasonal fluctuations and cyclical fluctuations in a time series. 6
- (b) How can cyclical fluctuations be measured? 4

UNIT—III

5. (a) Define sampling. 2
- (b) Distinguish between purposive sampling and random sampling. 4
- (c) What are the techniques of random sampling? 4

6. What do you understand by sampling errors? How do they arise in sampling? 3+7=10

UNIT—IV

- (a) Distinguish between point estimation and interval estimation. 5
- (b) A random sample of 500 apples was taken from a large consignment and 60 were found to be bad. Obtain the 98% confidence interval for the proportion of bad apples in the consignment. 5



8. (a) What do you understand by the sampling distribution of a statistic? 3
- (b) Define standard error. 3
- (c) Add a note on the utility of standard error in the construction of the confidence interval. 4

## UNIT—V

9. (a) What do you understand by tests of significance? 2
- (b) Distinguish between single-tailed and two-tailed tests. 3
- (c) Explain the steps involved in the testing of hypothesis. 5

10. (a) What is Student's  $t$ ? How will you use it to test the difference of means in a paired sample? 5

(b) The heights of 10 males of a given locality are found to be 71, 68, 63, 69, 62, 67, 70, 65, 64 and 66 inches. Can it be assumed that the average height is greater than 64 inches? Test at 5% level of significance.



( For Science Students )

Course No. : ECOH-602 (B)

( Elements of Economics—II )

Answer five questions, taking one  
from each Unit

UNIT—I

1. (a) Distinguish between perfect multicollinearity and less than perfect multicollinearity. "The effect of perfect multicollinearity on the regression coefficients is more severe than that of less than perfect multicollinearity." Discuss with suitable illustration. 2+4=6
- (b) Point out the important causes of multicollinearity. 4
2. (a) How can one detect the presence of multicollinearity in a regression model? Discuss elaborately. 8
- (b) How does pooling of the data help to control the problem of multicollinearity? 2



## UNIT—II

3. (a) Distinguish between homoscedasticity and heteroscedasticity.

(b) What are the causes of heteroscedasticity?

(c) Discuss Goldfeld-Quandt test for detecting the problem of heteroscedasticity.

4. (a) Discuss the concept of autocorrelation and its causes.

(b) Discuss the remedial measures of autocorrelation.

## UNIT—III

5. (a) What is a dummy variable? Discuss the importance of dummy variables in economic research. 2+3=

(b) Discuss the phenomenon of dummy variable trap in a single-equation regression model with the help of a suitable illustration.

6. (a) What is meant by benchmark category in the context of dummy variables?



(b) Discuss the concepts of slope dummy, intercept dummy and interaction dummy with suitable illustrations.

2+2+2=6

(c) What is an ANCOVA model in the context of dummy variables?

2

UNIT—IV

7. (a) What is time series?

2

(b) Discuss elaborately about various components of time series.

8

8. (a) Discuss the important applications of time series.

6

(b) Which component of time series is mainly applicable in the following cases?

4

(i) Fire in a factory

(ii) Sale of cold drinks

(iii) An era of prosperity

(iv) Prices of agricultural commodities

UNIT—V

(a) Discuss moving average method as a tool for measuring trend in time series with its relative merits and demerits.

6

( Turn Over )



(b) Using four-yearly moving averages, obtain the trend values for the following data :

Year	Production (in metric ton)
1971	68
1972	62
1973	61
1974	63
1975	65
1976	68
1977	63
1978	67

10. (a) Point out the merits and demerits of least squares method in measuring the trend of a time series. 2+2=

(b) Fit a straight line trend by the method of least squares to the following data.

Year	Sales (in ₹ lakh)
1976	76
1977	80
1978	130
1979	144
1980	138
1981	120
1982	174
1983	190

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