(b) What are the uses and limitations of a cost living index number ? Describe in detail how it is constructed in general.   7,8

6. (a) Distinguish between the seasonal and cyclical variations with suitable examples.

(b) Describe the 'Ratio-to-Moving Average Method' for measurement of seasonal fluctuations in a time series with merits and demerits.   8,7

7. (a) What are Growth curves ? Explain briefly the Logistic curve, derive the equation and write the properties of Logistic curve.

(b) Describe simple and weighted Aggregate method for constructing the index numbers.   8,7

4/12/18 (Evening)

This question paper contains **4** printed pages]

Roll No.

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt *five* questions in all.

1. (a) Define an index number. What are the uses and limitations of index number ?

(b) Fit a straight line trend by method of least square and estimate the trend values for the given data :

Years	Profit
1998	70
1999	75
2000	90
2001	91
2002	95
2003	98
2004	100

Also estimate the sales for the year 2006.   7,8

P.T.O.

2. (a) Show that Fisher's ideal index number satisfies the Time Reversal Test and Factor Reversal Test.

(b) Using ratio to trend method, calculate seasonal index for the following data :

Year/quarter	I	II	III	IV
2000	14	20	10	15
2001	12	19	11	15
2002	13	21	12	14

7,8

3. (a) What do you mean by the significance of Time series ? Explain the three yearly moving average methods to measure the trend with merits and demerits.

(b) Compute price index number for the year 2012 using the year 2011 as the base year :

Commodity	2011		2012	
	Price	Expenditure	Price	Expenditure
A	8	80	10	120
B	10	120	12	96
C	5	40	5	50
D	4	56	3	60
E	20	100	25	150

(i) Laspeyre's method

(ii) Paasche's method and

(iii) Fisher's method.   7,8

4. (a) Name the characteristic movement of time series with which you will mainly associate :

(i) A fire in factory that delays the factory's production for two weeks.

(ii) A fall in death rate due to scientific advancement.

(iii) Increase in demand for gift items during festivals.

(iv) New lunches and phase out of gadgets from market.

(v) Rainfall in India.

(vi) Inflation.

(b) Explain briefly the variate difference method of random component, also give the suitable example of random component.   6,9

5. (a) What do you mean by chain base index number ? How is it constructed and converts into the fixed base index number ?