

**22U5102**

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Name: .....

Reg. No: .....

**FIFTH SEMESTER UG DEGREE EXAMINATION, NOVEMBER 2024**

(CBCSS-UG)

(Regular/Supplementary/Improvement)

**CC19U STA5 D01 – ECONOMIC STATISTICS**

(Statistics – Open Course)

(2019 Admission onwards)

Time: 2 Hours

Maximum: 60 Marks

Credit: 3

**SECTION-A**

(Short answer type, not to exceed 50 words each)

Answer *all* questions. Each question carries 2 marks.

1. Define time series?
2. What is the principle of least squares?
3. Define secular trend of a time series?
4. Explain seasonal variation, how is it calculated?
5. Write down the normal equations for fitting parabola?
6. What are irregular variation? How do they differ from Cyclic variation?
7. Index numbers are specialized averages. Explain?
8. What are the limitations of Index numbers?
9. What are the essential qualities of an ideal index number?
10. Define deflating?
11. Write down the formula for Kelly's Index number?
12. Distinguish between fixed base and chain base index number?

**(Ceiling: 20 Marks)**

**SECTION-B**

(Paragraph I Problem type, not to exceed 100 words each)

Answer *all* questions. Each question carries 5 marks

13. Describe briefly the various methods of determining trend in a time series.
14. What are the merits and demerits of semi average method?
15. For the following time series, fit a straight line by the method of least squares.

Estimate the values for the year 1997.

Year	1991	1992	1993	1994	1995
Value	20	60	80	120	160

16. Obtain the trend values by finding three yearly moving averages for the following data:

Year	1987	1988	1989	1990	1991	1992	1993	1994
Quantity	120	133	140	162	155	180	210	218

17. Explain the different methods used for the construction of price index numbers?

18. Explain time reversal test and factor reversal test? Show that Fisher ideal index number satisfies both?

19. Compute Laspeyre's index number from the following data:

Commodity	Base year		Current Year	
	Price	Quantity	Price	Quantity
A	12	100	20	80
B	8	120	12	150
C	4	200	4	240
D	20	60	24	50

(Ceiling: 30 Marks)

### SECTION-C

(Essay type, not to exceed 500 words)

Answer at least *one* question. Each question carries 10 marks.

20. Calculate seasonal indices by the ratio to moving average method from the following data:

Year	Quarter I	Quarter II	Quarter III	Quarter IV
2012	68	62	61	63
2013	65	58	66	61
2014	68	63	63	67

21. What are the precautions to be taken while using consumer price index numbers?

(1 × 10 = 10 Marks)

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