(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2017

(Second Semester)

Branch - **STATISTICS**

TIME SERIES & INDEX NUMBERS

Time : Three Hours Maximum : 75 Marks

SECTION-A (20 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks (10x2 = 20)

1 Define irregular variation.

2 Write the normal equations for fitting a trend line y = a + bx

3 Give any two merits of ratio to trend method of finding seasonal variations.

4 What is cyclical fluctuations?

5 Define quantity index for simple aggregate method.

6 Write the formula for finding chain index for current year.

7 What do you mean by cost of living index?

8 What is factor reversal test?

9 What is gross domestic product?

10 Give any two uses of national income estimates.

SECTION - B (25 Marks)

Answer **ALL** Questions

ALL Questions Carry **EQUAL** Marks (5 x 5 = 25)

11 a Describe the utility of time series analysis.

OR

b Fit a straight line trend by the method of least squares.

Year :	1996	1997	1998	1999	2000	2001
Production :	7	9	12	15	18	23

12 a Determine the seasonal indices by the method of simple averages.

Year	Qi	Qi	Qs	Q_4
1985	3.7	4.1	3.3	3.5
1986	3.7	3.9	3.6	3.6
1987	4	4.1	3.3	3.1
1988	3.3	4.4	4	4

OR

b Explain variate - difference method.

13 a Differentiate between fixed base and chain base index numbers.

OR

b Prepare fixed base index numbers from the chain base index numbers.

1991	1992	1993	1994	1995
100	130	140	no	160

14 a Calculate suitable index number for the following data -

Commodities	A	B	C	**D**	E
Base yr. price	32	41	53	64	17
Base yr. qty	7	5	6	3	8
Current yr*. price	43	57	63	82	19

Cont..

OR

14 b Explain briefly about cost of living index.

15 a Describe briefly about National Income.

OR

b Discuss the computational difficulties of estimating National Income.

SECTION - C (30 Marks)

Answer any **THREE** Questions
ALL Questions Carry **EQUAL** Marks (3 x 1 0 = 30)

16 Explain the method of moving averages and effect of moving average on other components.

17 Calculate seasonal indices by ratio to moving averages.

Year	Qi	Q_2	Qs	Q_4
1983	68	62	61	63
1984	65	58	66	61
1985	68	63	63	67

18 From the following data of whole sale prices of wheat for 10 years construct index numbers taking (a) 1986 as base (b) chain base method.

Year:	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Price of wheat:	50	60	62	65	70	78	82	84	88	90

19 Explain in detail about tests for ideal index numbers.

20 Explain different methods for estimating National Income.

Z-Z-Z END