PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BA DEGREE EXAMINATION DECEMBER 2018
(Fourth Semester)

Branch – **ECONOMICS**

STATISTICAL METHODS – II

Time : Three Hours Maximum : 75 Marks

SECTION-A (20 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (10 x 2 = 20)

1 Define Index number.
2 What is Fisher's Ideal index?
3 What is meant by Seasonal variation?
4 State the merits of the method of moving averages.
5 What are the approaches to probability?
6 What do you mean by multiplication theorem?
7 What is binomial distribution?
8 What is Hypothesis?
9 What is Chi Square distribution?
10 What is degrees of freedom?

SECTION - B (25 Marks)
Answer **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5 x 5 = 25)

11 a Explain the construction of a consumer price index.

OR

b Calculate (i)Laspeyre's, (ii) Paasche's and (iii) Fisher's indices for the given data

Commodity	p_0	q_0	p_1	q_1
A	12	10	15	12
B	15	7	20	5
C	24	5	20	9
D	5	16	5	14

12 a Fit a straight line trend by the method of free hand.

Year	2010	2011	2012	2013	2014	2015	2016	2017
Price in Rs.	40	60	50	80	70	100	90	110

OR

b Write a note on Seasonal variation.

13. a A bag contains 30 balls numbered from 1 to 30. One ball is drawn at random. Find the probability that the number of the drawn ball will be a multiple of (a) 5 or 7 and (b) 3 or 7

OR

b Explain the importance of probability in statistics.

14 a A test on two groups of boys and girls gave the following results:

	Mean	S.D	N
Boys	45	3	150
Girls	75	5	100

Do you conclude that the marks scored by girls are more than boys at 0.05 level of significance.

OR

b Point out the properties of binomial distribution

15 a Explain the uses of Chi square distribution in statistical analysis.

OR

b Discuss the two way classification technique of analysis of variance.

SECTION - C (30 Marks)

Answer any **THREE** Questions
ALL Questions Carry **EQUAL** Marks (3 x 10 = 30)

16 Compute index number using Fisher's Ideal formula and that it satisfies Time Reversal Test and Factor Reversal Test.

Commodity	Base Year		Current Year	
	Quantity	Price	Quantity	Price
A	12	10	15	12
B	15	7	20	5
C	24	5	20	9
D	5	16	5	14

17 Calculate trend value from the following data using the method of least square.

Year :	2011	2012	2013	2014	2015	2016
Production :	7	9	12	15	18	23

18 Explain the various approaches to probability.

19 In a normal distribution 31% of the items are under 45 and 8% are over 64. Find the mean and standard deviation of the distribution.

20 4 coins were tossed 160 times and the following results were obtained:

No. of heads	0	1	2	3	4
Observed frequencies	17	52	54	31	6

Under the assumption that coins are balanced, find the expected frequencies of getting 0,1,2,3 or 4 heads and test the goodness of fit.

Z-Z-Z END