(8 pages) **Reg. No. :** .....

Code No. : 20440 E **Sub. Code : SMCO 32**

B.Com. (CBCS) DEGREE EXAMINATION, NOVEMBER 2018.

Third Semester

Commerce — Main

BUSINESS STATISTICS

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Age, sex, marital status and education are the demographic variables related to
   (a) primary data
   (b) secondary data
   (c) historical data
   (d) both (a) and (b)

2. The scope of the survey depends on
   (a) the objective
   (b) resources
   (c) the objective and resources
   (d) none of these

3. The mean and ———— are the relevant descriptive measures of central tendency
   (a) dispersions (b) mode
   (c) median (d) standard deviation

4. It is one of the measures of central tendency
   (a) Mean deviation (b) Range
   (c) Median (d) Correlation

5. Range is a measure of ————
   (a) Central tendency (b) Dispersion
   (c) Skewness (d) None of these

6. The regression lines cut each other at the point of
   (a) average of x and y (b) average of y only
   (c) average of x only (d) none of these

7. _____ is to measure of the degree to which two interval variables are linearly associated.

(a) Linear correlation

(b) Simple regression

(c) Coefficient of correlation

(d) Multiple regression

8. The formula to find spearman s rank correlation coefficient is _____

(a) $r = 1 - \frac{6\Sigma d^2}{N(N^2-1)}$ (b) $r = 1 - \frac{6\Sigma d^2}{N^3 - N^2}$

(c) $r = 1 - \frac{6\Sigma d^2}{N^3(N-1)}$ (d) None of these

9. The price index number followed in India is

(a) Wholesale price index

(b) Consumer price index

(c) (a) and (b)

(d) None of these

10. Unweighted index number gives Importance for

(a) more price (b) less price

(c) changing price (d) stable price

PART B — (5 × 5 = 25 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain the characteristics of statistics.

Or

(b) State the various methods of collecting primary data.

12. (a) Calculate Arithmetic mean from the following data:

Age in years :	8	10	12	15	18
Number of workers :	5	7	12	6	10

Or

(b) Find mean deviation from the following data.

X:	2	4	6	8	10
Y:	1	4	6	4	1

13. (a) Calculate quartile deviation from the following data :

Value of the items :	12	13	14	25	26	27	28	40
Frequency :	2	3	5	8	7	3	2	1

Or

(b) In a correlation study, the following values are obtained.

	X	Y
Mean	65	67
Standard deviation	2.5	3.5
Coefficient of correlation	0.8	

Find regression equations.

14. (a) Find the line of regression of y on x.

X:	1	2	3	4	5	8	10
Y:	9	8	10	12	14	16	15

Or

(b) Calculate Karl Pearson coefficient of correlation from the following data.

X:	45	70	65	30	90	40	50	75	85	60
Y:	35	90	70	40	95	40	60	80	80	50

15. (a) Calculate Fisher's index number for the following data :

	2015		2016	
Commodity	Price	Quantity	Price	Quantity
A	8	6	12	5
B	10	7	11	6
C	7	8	8	5

Or

(b) Calculate three yearly moving averages from the following data.

Years :	1991	1992	1993	1994	1995
Production (000 tons) :	21	22	23	25	24
Years :	1996	1997	1998	1999	2000
Production (000 tons) :	22	25	26	27	28

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain the functions of statistics.

Or

(b) Explain the various types of the diagrams.

17. (a) Compute Harmonic mean

Wages (RS) :	0-10	10-20	20-30	30-40	40-50
No of Workers :	5	8	12	6	4

Or

(b) Find the standard deviation from the following data:

Wages	70-80	80-90	90-100	100-110
No. of persons	12	18	35	42
Wages	110-120	120-130	130-140	140-150
No. of persons	50	45	20	8

18. (a) Explain the differences between correlation and regression.

Or

(b) State the different types of correlation.

19. (a) Calculate coefficient of correlation and obtain the lines of regression of the following calculate the marks in statistics when the marks in economics 30.

Marks in economics : 25 28 35 32 31 36 29 38 34 32

Marks in statistics : 43 46 49 41 36 32 31 30 33 39

Or

(b) Calculate Bowley' s Coefficient of skewness.

Age :	0-10	10-20	20-30	30-40	40-50
No of persons :	8	11	26	9	6

20. (a) Calculate Laspeyre's Paache's and Bowley's index numbers from the following data.

	Base year		Current year	
Commodity	Price	Quantity	Price	Quantity
A	6	50	10	56
B	2	100	2	120
C	4	60	6	60
D	10	30	12	24
E	8	40	12	36

Or

(b) Fit a straight line from the following time series by the method of least squares.

1980	1981	1982	1983	1984
70	74	80	86	90