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

Code No. : 20452 E **Sub. Code : SMCO 32**

B.Com. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2020.

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. A statistic is
   (a) a sample characteristic
   (b) a population characteristic
   (c) unknown
   (d) normally distributed

2. The source of secondary data is
   (a) personal investigation
   (b) through instigators
   (c) through questionnaire
   (d) research journals and newspapers

3. The most frequently occurring value of a data set is called the

(a) range (b) mode

(c) mean (d) median

4. The value that has half of the observations above it and half the observations below it is called the

(a) range (b) median

(c) mean (d) mode

5. If quartile range is 24 then quartile deviation is

(a) 48 (b) 12

(c) 24 (d) 72

6. If arithmetic mean is multiplied to coefficient of variation then resulting value is classified as

(a) coefficient of deviation

(b) coefficient of mean

(c) standard deviation

(d) variance

7. The correlation coefficient is used to determine

(a) a specific value of the y-variable given a specific value of the x-variable

(b) a specific value of the x-variable given a specific value of the y-variable

(c) the strength of the relationship between the x and y variables

(d) none of these

8. In regression analysis, if the independent variable is measured in kilograms, the dependent variable
   (a) must also be in kilograms
   (b) must be in some unit of weight
   (c) cannot be in kilograms
   (d) can be any units

9. An index number is used
   (a) to measure changes in demand
   (b) to measure changes in price
   (c) to measure changes in quantity
   (d) to measure changes in a variable over time

10. Which of the following is not an example of a time series model?
   (a) Naive approach
   (b) Exponential smoothing
   (c) Moving average
   (d) None of the above

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) State the uses of tabulation.

Or

(b) Bring out the advantages of statistical survey.

12. (a) Daily income of ten families of a particular place is given below. Find out geometric mean.

85 70 15 75 500 8 45 250 40 36

Or

(b) Find median :

X	55	65	75	85	95	105	115
F	8	10	16	14	10	5	2

13. (a) Calculate coefficient of Range.

12, 15, 14, 13, 10, 17

Or

(b) Calculate mean deviation.

8, 7, 6, 5, 4, 3

14. (a) Two random variables have the regression equations $3x + 2y = 26$ and $6x + y = 31$. Find the means.

Or

(b) Explain the various types of correlation.

15. (a) Fit a straight line trend equation by the method of least squares and estimate the trend values :

Year :	2005	2006	2007	2008	2009	2010	2011	2012
Value :	80	90	92	83	94	99	92	104

Or

(b) Explain the importance of analysis of time series.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Discuss the various methods of sampling.

Or

(b) Explain the merits and demerits of census method.

Merits of a census investigation	Demerits of a census investigation
(i) Intensive study	(i) Costs
(ii) Reliable data	(ii) Time-consuming
(iii) Suitable choice	(iii) Possibilities of errors
(iv) The basis of various surveys	

17. (a) From the following data calculate the missing value when mean is 115.86.

Wages (Rs.) :	110	112	113	117	X	125	128	130
No. of workers :	25	17	13	15	14	8	6	2

Or

(b) Compute median for the data given below :

Expenditure (Rs.) :	160	200	250	320	410	500	570
No. of families :	5	12	23	18	13	8	3

18. (a) Calculate Q.D. and coefficient of Q.D.

X	250	300	325	350	375	400	600
F	20	14	6	26	9	13	4

Or

(b) Calculate Karl Pearson measure of Skewness

Wages :	12	15	20	25	30	40	50
Workers :	10	25	40	70	32	13	10

19. (a) Calculate Karl Pearson's coefficient of correlation from the following data :

x	10	12	18	24	23	27
y	13	18	12	25	30	10

Or

(b) Find out Rank correlation coefficient.

Serial No.	1	2	3	4	5	6	7	8	9	10
Rank in commerce	1	2	3	4	5	6	7	8	9	10
Rank in accountancy	2	4	1	5	3	9	7	10	6	8

20. (a) Construct chain indeed numbers from the link relatives given below :

Year	2008	2009	2010	2011	2012
Index Nos.	100	105	95	115	102

Or

(b) Find the five-yearly period of moving average from the following data :

Year	2001	2002	2003	2004	2005	2006
Production ('000)	14	17	22	28	26	18
Year	2007	2008	2009	2010	2011	2012
Production ('000)	20	24	25	29	30	23

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