BBA 3rd Semester (Honours) Examinations, 2020

Subject: Business Statistics

Paper: BBA-3.2

Time: 3 Hours **Full Marks: 80**

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

Group - A

Answer any six questions. 5×6=30

1. Find the median of the following distribution:

Gross profit as % of sales:	0-10	10-20	20-30	30-40	40-50
Number of companies:	22	38	46	35	20

2. The arithmetic mean of 50 items of a series was calculated by a student as 20. However, it was later discovered that an item 25 was misread as 35. Find the correct value of mean.

3. Distinguish between simple geometric mean and weighed geometric mean, citing examples.

4. Calculate mean deviation from median for the following data:

Class Intervals:	20-25	25-30	30-40	40-45	45-50	50-55	55-60	60-70	70-80
Frequency:	6	12	17	30	10	10	8	5	2

Also calculate the coefficient of Mean Deviation.

5. The following data are given to an economist for the purpose of economic analysis. The data refers to the length of life of a certain type of batteries.

$n = 100, \sum fd = 50, \sum fd^2 = 1970, \sum fd^3 = 2948, \sum fd^4 = 86{,}752$. Here $d = X - 48$.

Do you think that the distribution is platykurtic?

6. From the following table, find the missing values and calculate the coefficient of correlation by Karl Pearson's method:

X:	6	2	10	4	?
Y:	9	11	?	8	7

Arithmetic means of X and Y series are 6 and 8 respectively.

7. How do you define an index number? Explain the uses of seasonal index in time series analysis.

8. What do you mean by deseasonalisation of data? State the process of deseasonalisation of data.

Group -B

Answer any five questions. 10×5=50

9. (a) The mean and median of a moderately skewed distribution are 42.2 and 41.9 respectively. Find the mode of the distribution.

   (b) Define Standard Deviation. Find the standard deviation of the following distribution:

Weight (Kg.)	45-50	50-55	55-60	60-65	65-70
No. of person	10	16	32	28	14

10. (a) Find the median of the following distribution:

Gross profit as % of sales:	0-10	10-20	20-30	30-40	40-50
Number of companies:	22	38	46	35	20

   (b) The arithmetic mean of two observations is 127.5 and their geometric mean is 60. Find the two observations.

11. (a) Calculate Karl Pearson's coefficient of skewness based on Mean and Median from the following distribution:

Class Intervals:	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency:	6	12	22	48	56	32	18	6

   (b) Write a short note on 'Measures of Kurtosis'.

12. (a) State the properties of simple correlation coefficient.

   (b) Prove that the correlation coefficient varies between +1 and -1.

13. (a) Six students got the following percentage of marks in Business Economics (BE) and Management Accounting (MA):

Student (Roll No.):	1	2	3	4	5	6
Marks in BE:	60	75	65	79	80	55
Marks in MA:	65	85	62	80	82	67

   Calculate Spearman's rank correlation coefficient.

   (b) What are regression lines? Why is it necessary to consider two lines of regression?

14. (a) Explain with example what you mean by a price index number.

   (b) Prepare quantity index numbers for 2012 with 2008 as the base year from the following data, using (i) Laspeyres' formula, (ii) Fisher's formula,

Commodity	2008		2012	
	Price	Quantity	Price	Quantity
A	5	10	8	12
B	10	15	15	12
C	12	14	20	15
D	16	12	12	20
E	8	10	10	12

15. What do you mean by a time series? Describe the various components of time series.