

**2024**

**BUSINESS ADMINISTRATION — HONOURS**

**Paper : BBAA-201-CC2**

**(Statistics for Business Decision)**

**Full Marks : 75**

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

**Section - A**

1. Answer *any ten* questions :

2×10

- (a) What is the purpose of descriptive statistics?
- (b) Which measure of central tendency is most affected by outliers?
- (c) What is the correlation coefficient used for?
- (d) What is a sample in statistics?
- (e) What is the type of correlation that shows positive relationship?
- (f) What is the type of data that can only take specific values?
- (g) What is the purpose of mode?
- (h) What is the purpose of median?
- (i) What is secondary data?
- (j) What is the basic difference between correlation and regression?
- (k) Indicate whether the following is True or False :  
“Mode can be obtained from histogram.”
- (l) Indicate whether the following statement is True or False :  
“In negatively skewed distribution left side has longer tail.”
- (m) In regression equation  $Y = a + bx$ , the  $Y$  is called \_\_\_\_\_.
- (n) What is seasonality in a time series?
- (o) The purpose of exponential smoothing is to give more weight to \_\_\_\_\_.
- (p) What is the standard deviation used for?

**Please Turn Over**

**Section - B**

2. Answer *any five* questions :

5×5

- (a) The median of the following is 16. Find the missing frequency  $a$  and  $b$ , if the total of the frequency is 70.

<b>Class :</b>	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40
<b>Frequencies :</b>	12	$a$	12	15	$b$	6	6	4

- (b) What is meant by central tendency? What are the characteristics of a good measure of central tendency?
- (c) A regression analysis yields a slope (b) of 3.5 and intercept (a) of 2. Predict the value of  $Y$  when  $X$  is 5.
- (d) A time series data shows a monthly sales pattern of 10, 12, 11, 13, 12. Calculate the 3-month moving average and trend.
- (e) What are the limitations of Mean?
- (f) Can a strong correlation between two variables imply a causal relationship? Explain why or why not.
- (g) Describe the advantages and disadvantages of primary data, providing relevant example to support your answer.
- (h) Write down less than type cumulative frequency and greater than type cumulative frequency.

Height	Frequency
140-145	10
145-150	12
150-155	18
155-160	35
160-165	45
165-170	38
170-175	22
175-180	20

**Section - C**

3. Answer *any three* questions :

- (a) Calculate Mean deviation about mean from the following data :

10

<b>Class X :</b>	10-20	20-30	30-40	40-50	50-60	60-70	70-80
<b>Frequency :</b>	15	25	20	12	8	5	3

(3)

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- (b) Calculate the arithmetic mean from the following grouped data of average monthly balance of 600 customer : 10

Average Monthly Balance of 600 customer	
Class (₹)	Frequency
0-49.99	78
50-99.99	123
100-149.99	187
150-199.99	82
200-249.99	50
250-299.99	47
300-349.99	13
350-399.99	9
400-449.99	6
450-499.99	4

- (c) A company wants to predict the impact of advertising expenditure on sale revenue. The following data is collected :

Advertising Expenditure (₹)	Sales Revenue (₹)
1,000	15,000
2,000	25,000
3,000	35,000
4,000	45,000
5,000	55,000

Using regression analysis, answer the following :

- (i) Calculate the slope (b) and intercept (a) of the regression line.
- (ii) Write equation of the regression line.
- (iii) Predict the sales revenue if the advertising expenditure is ₹ 6000. 4+2+4
- (d) Explain the concept of time series analysis highlighting the following : 10
- (i) Definition and purpose of time series analysis.
- (ii) Component of time series
- (iii) Importance of time series analysis in business.
- (e) Explain with example the importance and scope of statistics in business decision. 10