

THIRD SEMESTER UG DEGREE EXAMINATION, NOVEMBER 2023

(Regular/Improvement/Supplementary)

BBA HONOURS

GBAH3B14T: BUSINESS STATISTICS

Time: 3 Hours

Maximum Marks: 80

PART A: Answer all the questions. Each carries one mark.**Choose the correct answer.**

1. Standard deviation of the sampling distribution is called.....
 - A) Probable error.
 - B) Mean Deviation.
 - C) Standard error.
 - D) Coefficient of Variation.
2. The square of coefficient of correlation is called.....
 - A) Coefficient of regression.
 - B) Coefficient of determination.
 - C) Coefficient of non-determination.
 - D) None of these.
3. Analysis of variance utilizes..... test.
 - A) T-test
 - B) Chi-square test
 - C) Z test
 - D) F test
4. Increased sales in a market due to a festival is related with.....
 - A) Trend values.
 - B) Cyclic variation.
 - C) Seasonal indices.
 - D) Irregular variation.
5. Which of the following terms describe data originally collected at an earlier time by some other person for some other purpose?
 - A) Primary data
 - B) Secondary data
 - C) Experimental data
 - D) Field notes

Fill in the Blanks.

6. For the given five values 15, 24, 29, 36, 48, the three years moving averages are
7. is the graphical representation of cumulative frequency distribution.
8. Rejecting a null hypothesis when it is actually true is known as
9. If $SD = 16$ and $mean = 30$, then coefficient of variation is.....
10. A estimate is a single number which is used as an estimate of the unknown population parameter.

(10 x 1 = 10 Marks)**PART B: Answer any eight questions. Each carries two marks.**

11. The coefficient of correlation between X and Y is 0.42, $\sigma_x = 6.72$, $\sigma_y = 4$, find b_{yx} .
12. Distinguish between statistic and parameter.
13. Define Statistics.

(PTO)

14. Calculate the value χ^2 statistic using the following data.

	Attacked	Not attacked
Inoculated	12	28
Non inoculated	13	7

15. The rank of 6 persons before and after attending a course are as follows:

Persons	A	B	C	D	E	F
Rank before	3	5	4	2	1	6
Rank after	4	6	5	2	1	3

Compute Spearman's Rank Correlation Coefficient.

16. Write a short note on use of computers for Descriptive Statistical analysis.
17. Two variables gave the following data: $\bar{X} = 20$, $\bar{Y} = 15$, $\sigma_x = 4$, $\sigma_y = 3$, $r = +0.7$ Obtain regression equation of Y on X.
18. A sample of 10 observations gives a mean equal to 38 and SD 4. Can we conclude that the population mean is 40?
19. In a survey, it was found that people use different modes of media to know the current news. The details are as follows:

Media	Newspaper	TV	Radio	Internet
Number of people:	120	80	20	150

20. If 10,20,30,40,50,60,70 are the observations, what is the coefficient of range?

(8 x 2 = 16 Marks)

PART C: Answer any six questions. Each carries four marks.

21. For the following pairs of values, obtain the correlation coefficient.

X :	4	6	5	9	6	11	8
Y :	6	14	10	17	12	18	14

22. What is meant by Questionnaire? How is it prepared?
23. In a study, the following regression equations were developed:
 $2y + 3x = 60$, $5y + 9x = 35$.
 Compute (a) mean of X and Y b) Correlation between X and Y
24. The following table gives the number of aircraft accidents that occurred during the seven days of the week. Find whether the accidents are uniformly distributed over the week using Chi square test of goodness of fit.

Days	Mon.	Tue.	Wed.	Thur.	Fri.	Sat.	Total
No. of accidents	14	18	11	11	15	14	84

25. From the following information find two regression equations:

X	8	6	7	4	5
Y	9	8	5	6	2

26. Construct a histogram for the following data.

Daily wages (Rs.)	200-300	300-400	400-500	500-600	600-700	700-800
Number of workers	30	50	80	100	70	60

27. Calculate S.D for the following data.

Class	0-9	10-19	20-29	30-39	40-49	50-59	60-69
Frequency	4	12	17	28	15	9	5

28. Define the following:

- (i) Interval estimation (ii) Standard error (iii) Parameter (iv) Efficiency

(6 x 4 = 24 Marks)

PART D: Answer any two questions. Each carries fifteen marks.

29. Find the Mean, Median and Mode for the following distribution:

Class	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	5	8	4	25	12	6	10

30. Calculate the trend values by finding 3 yearly moving averages. Show the trend on a graph.

Year:	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Sales:	1230	1060	1240	1300	1450	1160	1430	1320	1260	1120	1100

31. A trucking company wishes to test the average life of each of the three brands of tyres. The company uses all branches on randomly selected trucks. The records showing the lives (thousands of miles) of tyres are as given. Using ANOVA, test the hypothesis that the average life for each brand is the same. (Use $\alpha = 0.05$)

Brands		
A	B	C
3	5	7
2	2	5
1	7	5
1	4	5
3	2	8

(2 x 15 = 30 Marks)