

THIRD SEMESTER UG DEGREE EXAMINATION, NOVEMBER 2022**(Regular/Improvement/Supplementary)****BBA HONOURS****GBAH3B14T: BUSINESS STATISTICS****Time: 3 Hours****Maximum Marks: 80****PART A: Answer all the questions. Each carries 1 mark.****Choose the correct answer.**

1. Data taken from the publication will be considered as:
a) Primary data
b) Secondary data
c) Primary and secondary data
d) None
2. The median of the variate values 11, 7, 6, 9, 12, 15, 19 is:
a) 9
b) 12
c) 15
d) 11
3. An estimator is said to be..... if its expected value is identical with the population parameter being estimated.
a) Unbiased
b) Consistent
c) Efficient
d) Sufficient
4. is committed by accepting a false hypothesis.
a) Type I error
b) Type II error
c) Both
d) None of these
5. The component of a time series attached to long term variation is termed as:
a) Secular trend
b) Cyclic
c) Seasonal
d) Irregular

Fill in the Blanks

6. Given mean 45, mode 28, the median would be.....
7. When the values of two variables move in the opposite direction, correlation is said to be.....
8. A parameter is a function ofvalues.
9. Probability of type I error is called.....
10. Additive model of a time series is given as.....

(10 × 1 = 10 Marks)**PART B. Answer any eight questions. Each carries 2 marks.**

11. Define standard deviation. State any two properties of standard deviation.
12. Calculate coefficient of variation of 53, 55, 61, 77, 44, 62, 60, and 69.
13. For a moderately skewed distribution, AM = 160, mode = 157 and SD = 50. Find Pearson's coefficient of skewness.

(PTO)

14. The ranks 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.

15. Distinguish between statistic and parameter.

16. Give the formula for finding the confidence interval for the mean of a Normal population when population standard deviation is unknown and sample size is large.

17. Define efficiency.

18. Give the formula for finding 95 % confidence interval for the proportion of success based on sample of size 'n'.

19. What are the merits and demerits of graphic method in time series?

20. Define moving average method.

(8 × 2 = 16 Marks)

PART C: Answer any six questions. Each carries 4 marks.

21. Find the combined mean from the following data.

	Series x	Series y
Arithmetic mean	18	24
No. of items	70	65

22. Find Pearson's coefficient of skewness from the following data.

Class	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29
f	5	11	15	23	18	12

23. Distinguish between point estimation and interval estimation.

24. An office typist claims that he can type at a speed of 120 words per minute. Can we reject his claim on the basis of 100 trials in which he demonstrates a mean speed of 116 words with a variance of 225 words?

25. What is ANOVA technique? Explain one - way ANOVA.

26. What is secular trend? Explain any one method of measuring the trend of a time series.

27. A thousand individuals from a district were classified according to sex and colour blindness to form the following :

	Male	Female
Normal	442	514
Colour - blind	38	6

Using Chi-square test examine whether colour - blindness is independent of sex. Test at 5% level of significance.

28. Fit a trend line by the method of 3 – yearly moving averages to the data given below.

Year:	2002	2003	2004	2005	2006	2007	2008	2009
Value:	55	62	65	58	65	72	75	68

(6 x 4 = 24 Marks)

PART D: Answer any two questions. Each carries 15 marks.

29. Discuss the graphical methods of presenting frequency distributions.

30. The following data relate to the scores obtained by 9 salesmen of a company in an intelligence test and their weekly sales in thousand rupees.

Salesmen	A	B	C	D	E	F	G	H	I
Test score	50	60	50	60	80	50	80	40	70
Weekly sales	30	60	40	50	60	30	70	50	60

a) Obtain the two regression equations and find out what would be the test score of a salesman if his weekly sale is Rs. 55000.

b) If the intelligence test score of a salesman is 65 what would be his expected weekly sales?

31. From the following data, calculate trend by 3 - yearly moving averages. Show the trend on a graph.

Year:	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Production:	55	66	78	70	76	88	100	120	130	135

(2 x 15 = 30 Marks)