TDC (CBCS) Odd Semester Exam., 2023

COMMERCE

(3rd Semester)

Course No. : COMGE–301T

(Business Statistics)

Full Marks : 50
Pass Marks : 20

Time : 3 hours

The figures in the margin indicate full marks for the questions

SECTION—A

Answer *fifteen* questions, selecting any *three* from each Unit as directed : 1×15=15

UNIT—I

1. What do you mean by statistical data?

2. Write down the relationship between mean, median and mode.

3. The sum of the deviations of the variables from their arithmetic mean is _____.

(Fill in the blank)

4. Calculate the range of 47, 50, 49, 70, 63, 55, 81.

UNIT—II

Define the following in *one* sentence :

5. Independent events

6. Conditional probability

7. Trial

8. Random variable

UNIT—III

9. Define positive correlation.

10. The correlation coefficient is the GM/AM of the regression coefficients.

(Choose the correct option)

11. Regression coefficient lies between 0 and ∞.

(Write True or False)

12. _____ correlation is used to measure the correlation of qualitative data.

(Fill in the blank)

UNIT—IV

13. Write down the formula of Paasche's price index number.

14. Give one example of irregular variation.

15. Name two tests for ideal index number.

16. Write two components of time series.

UNIT—V

17. What is type—II error?

18. Define the term 'parameter'.

19. Mention one method of collection of statistical data.

20. What is simple random sampling?

SECTION—B

Answer *five* questions, selecting *one* from each Unit : 2×5=10

UNIT—I

21. What do you mean by positive and negative skewness?

22. Write down two uses of geometric mean.

UNIT—II

23. Write down the probability mass function of binomial distribution with parameters n and p.

24. Give two examples of Poisson distribution.

UNIT—III

25. Write down the two lines of regression.

26. Mention various methods of studying correlation.

UNIT—IV

27. What is consumer price index number?

28. Write down the importances of time series analysis.

UNIT—V

29. Write a note on non-sampling error.

30. What are the desirable properties of a good estimator?

SECTION—C

Answer *five* questions, selecting *one* from each Unit : 5×5=25

UNIT—I

31. Calculate mean and standard deviation from the following table : 2+3=5

Monthly wages	*No. of workers*
0–10	1
10–20	4
20–30	10
30–40	22
40–50	30
50–60	10
60–70	3

32. What are the different types of average? If two variables are linearly related, then show that their arithmetic mean is also linearly related. 2+3=5

UNIT—II

33. What is the probability of getting 3 white balls in a draw of 3 balls from a box containing 5 white and 4 black balls?

34. Briefly explain the 'Bayes theorem'.

UNIT—III

35. Obtain the lines of regression :

x	:	−10	−5	0	5	10
y	:	5	9	7	11	13

36. What is scatter diagram? Indicate by means of suitable scatter diagram different types of correlation that may exist between two variables.

UNIT—IV

37. Fit a linear trend by the method of least squares :

Year	*Production* (In crores)
2000	7
2001	10
2002	12
2003	14
2004	17
2005	24

38. Show that Fisher's index number formula satisfies both the time reversal and factor reversal tests.

UNIT—V

39. Explain the concept of standard error of a statistic.

40. What is sampling method? Discuss the limitations of sampling method. 2+3=5

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