PRESIDENCY UNIVERSITY
BENGALURU

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SCHOOL OF MANAGEMENT
END TERM EXAMINATION - JUN 2023

Semester : Semester II - 2022
Course Code : SOC2003
Course Name : Sem II - SOC2003 - Business Statistics
Program : BBA,BCH&BCM

Date : 21-JUN-2023
Time : 1.00PM - 4.00PM
Max Marks : 100
Weightage : 50%

Instructions:
(i) Read all questions carefully and answer accordingly.
(ii) Question paper consists of 3 parts.
(iii) Scientific and non-programmable calculator are permitted.
(iv) Do not write any information on the question paper other than Roll Number.

PART A

ANSWER ALL THE QUESTIONS   (10 X 2 = 20M)

1. Write the standard formula for estimating coefficients of linear regression equation $Y = a + bX$.
   (CO4) [Comprehension]

2. Index numbers are specialized averages, briefly discuss.
   (CO5) [Comprehension]

3. If a distribution has its, Arithmetic mean 50, its mode 65 and standard deviation 9. Identify the nature of skewness in the distribution.
   (CO3) [Comprehension]

4. Write the steps of calculating Mode of a grouped frequency distribution.
   (CO2) [Knowledge]

5. Write similarities and differences of pooled and panel data.
   (CO1) [Knowledge]

6. Outline features of statistical data.
   (CO1) [Knowledge]

7. Discuss the steps of calculating coefficient of variation for a raw data set.
   (CO3) [Knowledge]

8. How regression analysis is different from correlation analysis, briefly discuss.
   (CO4) [Comprehension]

9. Write Paasche's price index number formula.
   (CO5) [Comprehension]

10. Discuss the steps of calculating Harmonic mean of a grouped frequency distribution.
    (CO2) [Knowledge]

PART B

ANSWER ALL THE QUESTIONS   (4 X 10 = 40M)

11. The table given below is a data, in monetary terms, on productivity per acre of land in wheat cultivation and fertilizer usage per acre in the same land over 15 years. Identify the association between these variables with the help of a scatter plot.

Productivity (000)	60	45	55	15	20	30	15	15	2	10	25	20	10	30	55
Fertilizer Use (000)	50	50	30	10	30	15	5	15	5	15	10	30	5	50	40

(CO4) [Comprehension]

12. A statistician ventures to construct a retail food price index number for working class. Write the steps of constructing an index number.

(CO5) [Comprehension]

13. The table given below presents the daily common equity share price of Yes Bank and Punjab National Bank for 10 trading days. Compute standard deviation and coefficient of variation of them and identify the riskiest stock among the two.

Yes Bank	13	20	17	25	29	30	21	16	15	15
PNB	32	38	45	53	57	55	48	54	63	70

(CO3) [Comprehension]

14. The table given below shows the number of households with different ranges of monthly income. Calculate arithmetic mean, median and mode of the distribution.

Monthly income ('000')	10-30	30-50	50-70	70-90	90-110	110-130	130-150
Number of households	20	30	40	25	10	15	5

(CO2) [Comprehension]

PART C

ANSWER ALL THE QUESTIONS   (2 X 20 = 40M)

15. Table below shows the set of data on intelligence score and performance score of 8 contestants in an event. Compute Spearman's coefficient of correlation and identify the association between these variables.

Intelligence Score	40	60	80	120	50	100	110	90
performance Score		50	55	70	80	60	90	85	75

(CO4) [Application]

16. A researcher wants to study the mental health of people living in the outskirts of big cities. They have chosen Bangalore as the city for their study. However, there is no existing data collected by any organization on this topic
a. Discuss in detail different approaches he can adopt to carry out the data collection process
b. Prepare a hypothetical statistical table on two variables of any health status variable

(CO1) [Comprehension]