LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – STATISTICS

FIRST SEMESTER – APRIL 2022

16/17/18UST1MC01 – STATISTICAL METHODS

Date: 23-06-2022   Dept. No.   Max. : 100 Marks
Time: 09:00 AM - 12:00 NOON

SECTION - A

Answer all the questions.   (10 X 2 =20)

1. State any two limitations of statistics.
2. Distinguish between Primary data and Secondary data.
3. Mention Various measures of central tendency.
4. What is meant by Kurtosis?
5. State the principles of least square.
6. Write down the normal equations for fitting the curve y=a+bx to a given data.
7. Define correlation with an example.
8. State any two properties of regression coefficients.
9. Define Independence of attributes.
10. Define Yule's coefficient of association.

SECTION- B

Answer any FIVE questions.   (5 X 8 = 40)

11. Explain the Scope of statistics.

12. The survey about colour preferences reported the age distribution of the people who responded.

Age group (years)	1-18	19-24	25-35	36-50	51-69	70-74
count	10	97	70	36	14	5

Draw 'less than ogive' curve and locate the median.

13. Calculate the mean and mode for the following frequency distribution:

Monthly Wages	Less than 200	200-400	400-600	600-800	800-100
No. of workers	78	165	93	42	12

14. Compute Karl Pearson's co-efficient of Skewness for the following distribution.

Wages (in Rs.)	10-20	20-40	40-70	70-90	90-100
No.of Workers	5	15	30	8	2

15. Fit a straight line trend for the following data:

Year	1990	1991	1992	1993	1994	1995	1996
Y	127	101	130	132	126	142	137

16. Calculate the Correlation Coefficient from the following data.

X	12	9	8	10	11	13	7
Y	14	8	6	9	11	12	3

17. For the following data, Calculate the co-efficient of Rank Correlation.

X	80	91	99	71	61	81	70	59
Y	123	135	154	110	105	134	121	106

18. From the following data find out whether the data is consistent or not

(i) (AB) = 50 ; (αB) = 25 ; (α) = 100 and N = 200
(ii) (AB) = 200 ; N = 1000 ; (A) = 150 ; (B) = 300

SECTION- C

Answer any TWO questions.   (2 X 20 = 40)

19. (a) What is the need for diagrammatic representation of data? Explain the construction of one-dimensional diagrams. (12)

   (b) Draw a histogram and frequency polygon to represent the following data. (8)

Weekly wages	10-15	15-20	20-25	25-30	30-35	35-40
No. of workers	7	19	27	15	12	8

20. The number of matches played and goals scored by two teams A and B in foot-ball in World cup 2002 were as follows:

Matched played by Team A	27	9	8	5	4
Matched played by Team B	17	9	6	4	3
Number of goals scored in a Match	0	1	2	3	4

   Find which team may be considered more consistent.

21. Find the two lines of regression from the following data.

X	57	58	59	59	60	61	62	64
Y	67	68	65	68	72	72	69	71

   a) Find the value of Y when X = 66.
   b) Find the value of x when Y=70.
   c) Calculate the coefficient of correlation

22. a) Calculate the coefficient of association between the intelligence of fathers and sons from the following data (10)
   Intelligent fathers with intelligent sons = 300 Intelligent fathers with dull sons = 100
   Dull fathers with intelligent sons = 50 Dull fathers with dull sons = 500

   b) What is meant by 'curve fitting'? Give the normal equations to fit a second degree parabola. (10)

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