LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Com.,B.B.A. DEGREE EXAMINATION – CORP.SECRE./BUS.ADMIN.

THIRD SEMESTER – NOVEMBER 2009

ST 3105 - INTRODUCTION TO STATISTICS

Date & Time: 11/11/2009 / 9:00 - 12:00   Dept. No.   Max. : 100 Marks

SECTION –A

Answer ALL the questions.   (10 x 2 =20)

1. What are the limitations of statistics ?
2. State the different types of sampling.
3. Mention the uses of diagrammatic and graphical representations of data.
4. Calculate the H.M of the following quantities 3,6,24,28:
5. Define dispersion. What are the measures of dispersion?
6. Find the mean deviation about the mean for the following data:
    18,20,12,14,19,22,26,16,19,24
7. What are the properties of correlation coefficient ?
8. State Yule's coefficient of association.
9. What is time series? What are its components?
10. What is meant by seasonal average?

SECTION –B

Answer any FIVE questions: (5x 8 =40)

11. Explain the importance and scope of statistics.
12. Explain the different types of diagrammatic representation of data.
13. The A.M calculated from the following frequency distribution is known to be 67.5
    inches. Find the missing frequency .

Height in inches	60-62	63-65	66-68	69-71	72-74
Frequency	15	54	?	81	24

14. Two samples of sizes 40 and 50 respectively have the same mean 53 but   different
    standard deviations 19 and 8 respectively . Find the SD of the combined sample.
15.   From the following data, calculate Bow ley's coefficient of skew ness:

Marks	0-10	10-20	20-30	30-40	40-50	50-60
No. of Students	10	20	30	40	50	60

16. Calculate the coefficient of correlation between X and Y for the following data:

X	10	12	13	16	17	20	25
Y	19	22	26	27	29	33	37

17. 200 Candidates appeared for a competitive examination and 60 of them succeeded.
     35 received special coaching and out of them 20 candidates succeeded. Prepare a
     2X2 contingency table and using Yule's coefficient, discuss whether special
     coaching is effective or not.

18. Using three year moving average determine the trend and short term fluctuations:

Year	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Production (000tons)	21	22	23	25	24	22	25	26	27	26

SECTION – C   2 x 20 = 40

Answer any TWO questions.

19. (a) Find the mean, median and mode for the following data and verity the empirical relation.

Class	1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100
Frequency	3	7	13	17	12	10	8	8	6	6

(12)

19.(b). Draw a histogram and frequency polygon of the following data:

Mid Value	18	25	32	39	46	53	60
Frequency	10	15	32	42	26	12	9

(8)

20.(a) A factory produces two types of electric bulbs A and B. In an experiment relating to their life, the following result were obtained .

Length of life (in hours)	No. of bulbs	
	A	B
500-700	5	4
700-900	11	30
900-1100	26	12
1100-1300	10	8
1300-1500	8	6

Compare the variability of the two varieties of bulbs.   (12)

20.(b). The first four raw moments of a distribution about the value 5 are 7,70,140 and

175. Calculate β_1 and β_2. Comment on the values of the   distribution.   (8)

21.(a). In a partially destroyed records, the following data are available :
        Variance of X=25, Regression equation of X on Y is 5X –Y =22.
        Regression equation of Y on X is 64X -45Y =24. Find
            (i)   Mean Values   of X and Y
            (ii) Coefficient of correlation between X and Y.
            (iii) Standard Deviation of Y.   (12)

21.(b). Find the rank correlation for the following data:

X	92	89	87	86	86	77	71	63	53	50
Y	86	83	91	77	68	85	52	82	37	57

(8)

22. Calculate Seasonal indices by the ratio to moving average method from the following data:

Wheat prices (in rupees per quintal)

Quarter / Year	1972	1973	1974	1975
I	75	86	90	100
II	60	65	72	78
III	54	63	66	72
IV	59	80	85	93

(20)

****