

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Com.,B.B.A. DEGREE EXAMINATION – CORP.SECR. & BUS. ADMIN.

THIRD SEMESTER – APRIL 2010

ST 3105 / 3102 - INTRODUCTION TO STATISTICS

Date & Time: 28/04/2010 / 1:00 - 4:00

Dept. No.

Max. : 100 Marks

SECTION –A

Answer ALL the question:

(10 x 2 =20)

1. Define Statistics and give some applications of statistics.
2. Distinguish between primary and secondary data.
3. What is non- probability sampling?
4. Calculate geometric mean from the data given below .
42 57 21 115 127 39 155
5. What are the various measures of dispersion?
6. Define Skewness . How is it measured?
7. Define positive and negative correlations.
8. What are regression coefficients?
9. What are the various components of time sense?
10. Describe the semi average method of measuring trend.

SECTION –B

Answer any FIVE questions:

(5 x 8 =40)

11. Distinguish between classification and tabulation.
12. Draw the ogive curves for the following distribution and use it to determine the median

Marks	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99
No. of Students	7	11	24	32	9	14	2	1

13. The mean and SD of 20 items is found to be to 10 and 2 respectively. At the time of checking, it was found that one item 8 was incorrect. Calculate the mean and SD if the wrong item is replaced by 12.
14. In a frequency distribution, the coefficient of skewness based on quartiles is 0.6. If the sum of the upper and the lower quartiles is 100 and the median is 38, Find the value of the upper quartile.
15. Calculate correlation coefficient between the height (in inches) and the weight (in kg) from the data given below:

Height	60	63	65	64	68
Weight	50	53	60	67	70

16. From the following data, prepare a 2X2 table and using Yule's coefficient of association, discuss whether there is association between literacy and unemployment.
 Illiterate unemployed : 220 persons
 Literate employed : 20 persons
 Illiterate employed : 180 persons
 Total number of person : 50
17. Calculate the trend values by the method of moving averages assuming a four – yearly cycle from the following data relating to sugar production in India.

Year	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Sugar Production	37.4	31.1	38.7	39.5	47.9	42.6	48.4	64.6	58.4	38.6	51.4	84.4

18. Fit a straight line trend by the method of least squares for the following data. Assuming that the same rate of change continues, what would be the predicted earnings for the year 1995?

Year	1987	1988	1989	1990	1991	1992	1993	1994
Earnings	38	40	65	72	69	60	87	95

SECTION –C

Answer any TWO question:

(2 x 20 =40)

19. (a). From the following data, find out mode using empirical formula:

Class interval	3-4	4-5	5-6	6-7	7-8	8-9	9-10
Frequency	83	27	25	50	75	38	18

(10)

- 19.(b). Find the H.M. from the data given below:

Marks	15-25	25-35	35-45	45-55	55-65	65-75
No. of. Students	4	11	19	14	0	2

(10)

- 20.(a). Following are the marks obtained by two students A and B in 10 sets of Examination.

Sets	1	2	3	4	5	6	7	8	9	10
Marks of A	32	28	47	63	71	39	10	60	96	14
Marks of B	19	31	48	53	67	90	10	62	40	80

(10)

If the consistency of performance is the criterion for awarding the prize, who should get the prize?

20.(b). Calculate Bowley's coefficient of skewness from the following data:

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of Persons	10	25	20	15	10	35	25	10

(10)

21(a). Calculate the rank correlation coefficient from the following data:

X	52	63	45	36	72	65	47	25
Y	62	53	51	25	79	43	60	33

(10)

21.(b). You are given below the following information about advertising and sales

	Adv. Exp (X) (Rs. Lakhs)	Sales (Y) (Rs. Lakhs)
Mean	10	90
S.D.	3	12

Correlation coefficient =0.8

- (i) Obtain the two regression lines.
- (ii) Find the likely sales, when the advertisement expenditure is Rs. 15 lakhs.
- (iii) What should be advertisement expenditure if the company wants to attain sales target of Rs. 120 lakhs?

22.(a). Using three year moving average, determine the trend and short –term fluctuations.

(10)

Year	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Production In tonnes	24	26	28	25	25	26	27	28	29	30

(10)

22.(b). Find the trend values by the ratio- to- trend method from the data given below:

Year	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter
1991	30	40	36	34
1992	34	52	50	44
1993	40	58	54	48
1994	84	76	68	62
1995	80	92	86	82

(10)
