LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Com. DEGREE EXAMINATION – **COMMERCE**

SECOND SEMESTER – **APRIL 2014**

CO 2110 - STATISTICAL METHODS FOR ECONOMICS

Date : 07/04/2014 Dept. No. Max. : 100 Marks

Time : 09:00-12:00

SECTION A

Answer ALL questions. **(10 x 2 = 20 Marks)**

1. State the applications of statistics in commerce.
2. What are the methods of collecting primary data?
3. Differentiate between Judgment Sampling and Stratified Sampling.
4. State the purpose of classifying the data .
5. Write short notes on pie diagram.
6. mention the merits of mode?
7. Define the term standard deviation?
8. What is Karl pearson's coefficient of skewness?
9. Classify the types of correlation.
10. What are an index numbers?

SECTION B **(4 X 10 = 40 Marks)**

Answer any FOUR questions

11. Describe the scope of statistics.
12. Differentiate between classification and tabulation.
13. Draw a percentage bar diagram for the following data:

Expenditure	*Company A*	*Company B*
Wages	250	300
Materials	220	270
Taxation	360	250
Profits	130	150
Administration	40	30

14. Find the missing frequency for the following distribution if the mean is 12.9

Class Interval	0 – 5	5 – 10	10 – 15	15 – 20	20 – 25
Frequency	3	f	8	5	4

15. Two judges in a beauty competition rank the 12 entries as follows :

X	1	2	3	4	5	6	7	8	9	10	11	12
Y	12	9	6	10	3	5	4	7	8	2	11	1

What degree of agreement is there between the judgment of the two judges ?

16. Calculate three yearly moving average of the following data and also calculate Short-Term Fluctuations.

Year	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
No. of students	15	18	17	20	23	25	29	33	36	40

17. Construct the cost of living index number from the following group data:

Group	Weights	Current year price	Base year price
Food	4	47	30
Fuel and light	2	12	8
Clothing	3	18	14
House rent	2	15	22
Miscellaneous	1	30	25

SECTION C **(2 X 20 = 40 Marks)**

Answer any TWO questions

18.(a) Calculate the mean, median and mode from the following data:

Marks	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70	70 – 80	80 – 90
No. of students	4	12	35	41	27	13	9	4

(10)

18.(b) Calculate the mean deviation about the mean for the following data.

Class Interval	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	60 - 70
Frequency	8	12	10	8	3	2	7

(10)

19. (a) Calculate pearson's coefficient of Skewness from the following data:

Daily Expenditure	0 – 20	20 – 40	40 – 60	60 – 80	80 – 100
No. of families	13	25	27	19	16

(10)

19.(b) Find the mean and variance of the combined sample from the following data:

Sample	Mean	Variance	Size
I	115	64	90
II	113	36	50
III	120	49	60

(10)

20. You are given the following data:

	X	*Y*
Arithmetic Mean	36	85
Standard Deviation	11	8

Correlation coefficient between X and Y = 0.66

(a) Find the two regression equations.

(b) Estimate value of X when Y = 75.

(20)

21.(a) Fit a straight line trend for the following data by the method of least squares. Also estimate the trend sales for the Year 2005.

Year	1996	1997	1998	1999	2000	2001	2002
Sales (Rs.crore)	20	23	22	25	26	29	30

(10)

21.(b) Calculate Laspeyre's Index number, Paasche's price index number and Marshall-Edgeworth Index and how it satisfies Time reversal test and Factor reversal test.

Commodity	2005		2006	
	Price (in Rs.)	Quantity (in kgs.)	Price (in Rs.)	Quantity (in kgs.)
A	6	50	10	56
B	2	100	2	120
C	4	60	6	60
D	10	30	12	24
E	8	40	12	36

(10)