LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.B.A., B.COM DEGREE EXAMINATION – **BUSINESS ADM. & COR. SEC.**

THIRD SEMESTER – NOVEMBER 2016

ST 3105 - INTRODUCTION TO STATISTICS

Date: 12-11-2016 Dept. No. Max. : 100 Marks
Time: 09:00-12:00

SECTION -A

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

1. Define the term statistics, State the different types of tabulation.
2. What are the limitations of Statistics?
3. Define the term harmonic mean.
4. Calculate median for the following data:30,38,40,38,45,46,50,45,50,38
5. Define mean deviation.
6. Find range for the following data: 55, 60, 68, 45, 48,40
7. Define the term positive correlation.
8. What are the components of time series?
9. Define yule's coefficient of attributes.
10. Discuss the method of least square for the measurement of trend.

SECTION – B

Answer any FIVE questions **(5 X 8 = 40 Marks)**

11. Explain the scope of statistics in business studies.
12. Discuss the various diagrams in presenting statistical data.
13. Calculate the median for the following data.

Class Interval	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70	70 – 80
Frequency	33	12	16	42	32	45	26

14.Compute mean deviation about median from the following:

x	0-10	10-20	20-30	30-40	40-50	50-60	60-70
f	7	12	18	25	16	14	8

15. The scores of two players A and B in 10 rounds are given below:

Player A	35	54	52	53	56	58	52	50	51	49
Player B	108	107	105	105	106	107	104	103	104	101

Identify the better player and the more stable player.

16. Find the Rank Correlation coefficient from the following data:

Sl. No.	1	2	3	4	5	6	7	8	9	10
Ranks in Statistics	1	2	3	4	5	6	7	8	9	10
Ranks in Maths	2	4	1	5	3	9	7	10	6	8

17.Using five yearly moving averages determine the trend and short term fluctuations:

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Sugar Production	42	45	48	46	47	49	50	52	54	58

18. 500 Candidates appeared for a competitive examination and 60 of them succeeded.45 received special coaching and out of them 40 candidates succeeded. Prepare a 2 x 2 contingency table and using Yule's coefficient, discuss whether special coaching is effective or not.

SECTION- C

Answer any TWO questions **(2 X 20 = 40 Marks)**

19.(a) Calculate Mean, Median and Mode and verify empirical relation:

Class Interval	1 – 10	11 – 20	21 – 30	31 – 40	41 - 50	51 – 60	61 – 70	71 – 80
Frequency	7	9	12	15	10	6	5	4

(b) Find the combined mean from the following data:

$\overline{X_1} = 210 \quad n_1 = 50 \quad \overline{X_2} = 150 \quad n_2 = 100$ **(15 + 5)**

20. Calculate Bowley's coefficient of skewness for the following data:

Variable	0 -10	10-20	20-30	30-40	40-50	50-60
No of persons	10	20	30	40	40	30

(20)

21(a). Following are the marks scored by a group of 10 students in Accountancy and Statistics. Calculate the Coefficient of correlation and find the Probable Error.

Marks in Accountancy	90	75	63	95	71	75	31	24	40	76
Marks in Statistics	65	62	55	75	55	90	36	32	42	56

(b) Given below the information about advertising and sales

	Adv .Exp(X) (Rs. Lakhs)	Sales (Y) (Rs. Lakhs)
Mean	20	120
S.D	5	25

Correlation coefficient = 0.8

(i) Obtain the two regression lines.

(ii) Find the likely sales when advertisement expenditure is Rs.25 lakhs .

(iii) What should be the advertisement expenditure if the company wants to attain sale target of Rs.150 lakhs.

(10+10)

22 Calculate Seasonal Indices by the Ratio-To-Moving Average Method from the following data:

Year / *Quarter*	*1980*	*1981*	*1982*	*1983*
I	25	40	35	30
II	30	42	36	35
III	33	45	37	34
IV	35	46	38	36

(20)

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