



UNIVERSITY OF THE PUNJAB

PART-2nd Annual - 2017
Examination: B. Com.

Roll No.

Subject: Business Statistics & Mathematics
PAPER: BC-301

TIME ALLOWED: 3 hrs.
MAX. MARKS: 100

Note: attempt any five questions. All questions carry equal marks. Attempt at least TWO Questions from each section.

SECTION-I

1. From the following frequency distribution find Mean, Median, Mode and Coefficient of variation.

Weekly Earnings (in Rs)	No. of Workers	Weekly Earnings (in Rs)	No. of Workers
30 - 39	6	70 - 79	18
40 - 49	10	80 - 89	8
50 - 59	11		
60 - 69	12		

2. From the following data Calculate Co-efficient of co-relation, regression line Y on X and show that $(y - \hat{y}) = 0$

x	60	72	73	63	83	80	66	66	74	62
y	40	52	43	49	61	58	44	58	50	45

3. The price and quantities of four commodities in years 20012 and 2015.

Years	A		B		C		D	
	Price	Qty	Price	Qty	Price	Qty	Price	Qty
20012	10	25	13	21	4	10	9	20
2015	9	27	12	22	3	14	7	15

Compute Laspeyre's, Paasche's, MarshalEdgeworth Fisher's index number of prices for 2015.

4. A population consists of five numbers 7, 9, 11, 13 and 15. Take all the possible samples of size 2, without replacement from this population. Find the mean of all samples. From sampling distribution of these sample means.

Calculate:

- The mean and standard deviation of the population
- The mean and standard error of the sampling distribution of X.
- Verify the results. a) $\mu_x = \mu$ b) $\sigma_x^2 = \frac{\sigma^2}{n} \cdot \frac{N-n}{N-1}$

SECTION - II

5. Solve by cramer's rule:

$$\begin{aligned} x+y+z &= 6 \\ x+y-z &= 0 \\ 2x+3y-2z &= 2 \end{aligned}$$

6. (a) Solve by any method $4x^2 + 3x - 7 = 0$
(b) Solve for x and y.

$$\begin{aligned} 6x - 5y + 70 &= 0 \\ 4x &= 3y - 44 \end{aligned}$$

7. (a) Find the sum of infinite Geometric series $5 + 5/6 + 5/36 + \dots \infty$
(b) Which term of the sequence 31, 29, 27, is 3.

8. (a) What principal will amount to 12760 at 10.85% in 5 months ?

- (b) At what rate Rs. 71800 amount to Rs. 305000 in 22 months