UNIVERSITY OF THE PUNJAB

Associate Degree in Commerce / B.Com. Part – I Annual Exam – 2020

Roll No. ....

Subject: **Business Statistics & Mathematics**   Paper: BC-301

Time: 3 Hrs.   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, Mode, Standard Deviation and Coefficient of variation.

Weekly Earnings (in Rs)	No. of Workers	Weekly Earnings (in Rs)	No. of Workers
20 – 24	1	40 – 44	15
25 – 29	4	45 – 49	9
30 – 34	8	50---54	2
35 – 39	11		

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

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 2012 and 2015.

Years	A		B		C		D	
	Price	Qty	Price	Qty	Price	Qty	Price	Qty
2012	10	25	13	21	4	10	9	20
2015	9	27	12	22	3	14	7	15

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

4. A population consists of five numbers 0, 2, 4, 6, 8 and 10. 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:

  (i) The mean and standard deviation of the population
  (ii) The mean and standard error of the sampling distribution of X.
  (iii) Verify the results.

<div align="center">SECTION - II</div>

5. Solve by matrices: $2x + y = -1/2$
$$2x + 4y = 7$$

6. (a) The sum of two numbers is 64 their difference is 10. Find the two numbers
   (b) Solve for x and y.
   $$6x - 5y + 70 = 0$$
   $$4x = 3y - 44$$

7. (a) Find the sum of infinite Geometric series $5 + 5/6 + 5/36 + \ldots\ldots \infty$
   (b) Which term of the sequence 8, 1.6, 0.32, ... is 0.00256.

8. The difference between simple and compound interest on a certain sum is Rs. 250 for two years at 5% p.a find the sum

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